General Partner
Technical world®

SONY

SONY CHASSIS BE-4A
SONY KV-21M1A
SONY KV-21T1A
SONY KV-21M1B
SONY KV-21T1B
SONY KV-21M1D
SONY KV-21M1D
SONY KV-21T1D
SONY KV-21M1E
SONY KV-21M1E
SONY KV21-T1E
SONY KV-21M1K
SONY KV-21T1K
SONY KV-21M1L
SONY KV-21T1L
SONY KV21T1R
SONY KV-21M1U
SONY KV21T1U

ITEM MODEL	Television System	Channel Coverage	Colour System
Italian	B/G/H	VHF: E2-E12, S1-S20 UHF: E21-E69, S21-S41 HYPER: SI-S41	PAL
French	B/G/H, L	VHF: E2-E12, F2-F10, B-Q UHF: E21 -E69, F21 -F69 HYPER: SI-S41	PAL, SECAM
AEP	B/G/H	VHF: E2-E12 U H F : E21-E69 HYPER: SI-S41	PAL, SECAM
Spanish	B/G/H	VHF: E2-E12 UHF: E21-E69 HYPER: SI-S41	PAL
OIRT	B/G, D/K	B/G VHF: E2-E12 UHF: E21-E69 D/K VHF: R01-R12 UHF: R21-R69 Hyper : S1-S41	PAL, SECAM
Irish UK		UHF: U21-U69 VHF: A-J (Irish) UHF: U21-U69 (UK)	PAL

MODEL	21M1A 21T1A	21M1B 21T1B	21M1D 21T1D	21M1E 21T1E	21M1K 21T1K 21T1R	21M1L 21T1L	21M1U 21T1U
Power Consumption	39W	58Wh	58W	58W	58W	75W	75W

SPECIFICATIONS

Picture Tube — Super Trinitron
Approx. 54.5 cm (21 inches)
(Approx. 5 1 cm picture measured diagonally)

Rear/Front Terminals

[REAR]

- 1 2 1 -pin Euro connector (CENELEC standard)
- Inputs for audio / video signals
- Inputs for RGB

[FRONT]

- Video (phono jack)
- Audio (phono jacks)
- Headhpone jack - minijack

Sound output	4W (RMS) 5W (music power)
Dimensions	513x475x475 mm approx.
Weight	Approx. 21.5 kg
Supplied accessories	RM-836 Remote Commander (1) IEC designated batteries (2)
Other features	TELETEXT (for KV-2 1 T1 models)

[RM-836]

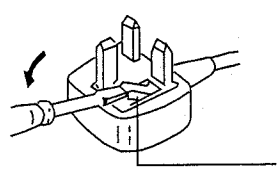
Remote control system	Infrared control
Power requirements	3V dc (2 batteries) R6 (size AA)
Dimensions	Approx. 210x45x24 mm (w/h/d)
Weight	Approx. 90g (Not including battery)

Design and specifications are subject to change without notice.

Item \ Model name	KV-21M1A KV-21T1A	KV-21M1B KV-21T1B	KV-21M1D KV-21T1D	KV-21M1E KV-21T1E	KV-21M1K KV-21T1K KV-21T1R	KV-21M1L KV-21T1L KV-21M1U KV-21T1U
PIP	OFF	OFF	OFF	OFF	OFF	OFF
MPIP	OFF	OFF	OFF	OFF	OFF	OFF
Scart 1	ON	ON	ON	ON	ON	ON
Scart 2	OFF	OFF	OFF	OFF	OFF	OFF
Front in (3)	ON	ON	ON	ON	ON	ON
Scart 4	OFF	OFF	OFF	OFF	OFF	OFF
Projector	OFF	OFF	OFF	OFF	OFF	OFF
AKB in 16:9 mode	OFF	OFF	OFF	OFF	OFF	OFF
Norm B/G/H	ON	ON	ON	ON	ON	OFF
Norm I	OFF	OFF	OFF	OFF	OFF	ON
Norm D/K	OFF	OFF	OFF	OFF	ON	OFF
Norm L	OFF	ON	OFF	OFF	OFF	OFF
Language Preset	Italian	French	German	Spanish	OIRT	English

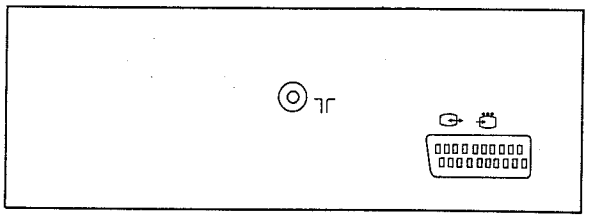
WARNING (KV-21M1L/21T1L/21M1U/21T1U only)

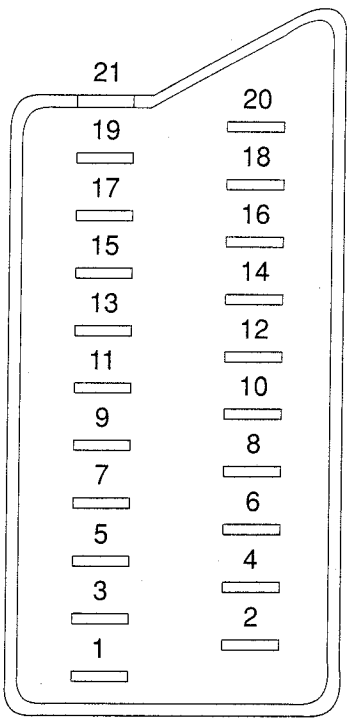
The flexible mains lead is supplied connected to a **B.S. 1363** fused plug having a fuse of **5 AMP** capacity. Should the fuse need to be replaced, use a **5 AMP FUSE** approved by **ASTA** to **BS 1362**, ie one that carries the ASTA mark.
IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR YOUR SOCKET OUTLETS IN YOUR HOME.
IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED.
THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET OUTLET.
When an alternative type of plug is used it should be fitted with a **5 AMP FUSE**, otherwise the circuit should be protected by a **5 AMP FUSE** at the distribution board.



How to replace the fuse.
Open the fuse compartment with the screwdriver blade
and replace the fuse.

21 pin connector (1)





Pin No.	1	2	4	Signal	Signal Level
1	○	○	○	Audio output B (Right)	Standard level : 0.5V rms Output impedance : Less than 1k ohms*
2	○	○	○	Audio input B (Right)	Standard level : 0.5V rms Output impedance : More than 10k ohms*
3	○	○	○	Audio output A (Left)	Standard level : 0.5V rms Output impedance : Less than 1k ohm*
4	○	○	○	Ground (Audio)	
5	○	○	○	Ground (Blue)	
6	○	○	○	Audio input A (Left)	Standard level : 0.5V rms Output impedance : Less than 10k ohm*
7	○	●	●	Blue input	0.7 ± 3dB, 75 ohms, positive
8	○	○	○	Function select (AV control)	High state (9.5 - 12V) : Part mode Low state (0 - 2V) : TV mode Input impedance : More10k ohms Input capacitance : Less than 2nF
9	○	○	○	Ground (Green)	
10	○	○	○	Open	
11	○	●	●	Green	
12	○	○	○	Open	
13	○	○	○	Ground (Red)	
14	○	○	○	Ground (Blanking)	
15	○	—	—	Red input	0.7 ± 3dB, 75 ohms, positive
	—	○	○	(S signal) croma input	0.7 ± 3dB, 75 ohms, positive
16	○	●	●	Blanking input (Ys signal)	High state (1 - 3V) Low state (0 - 0.4V) Input impedance : 75 ohms
17	○	○	○	Ground (Video output)	
18	○	○	○	Ground (Video input)	
19	○	○	○	Video output	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
20	○	—	—	Video input	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
	—	○	○	Video input Y (S signal)	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
21	○	○	○	Common ground (plug, sheild)	

○ Connected ● Not Connected (Open) * at 20Hz - 20kHz

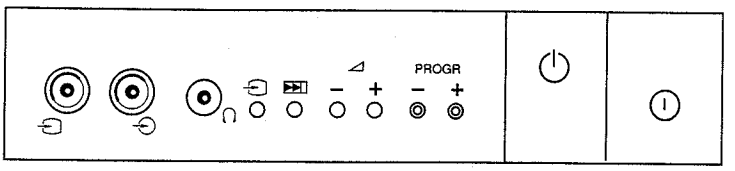


TABLE OF CONTENTS

Section	Title	Page
1. GENERAL		
	Getting Started	6
	TV Operation	7
	Teletext Operation (Only for KV-21TI models)	7
	Menu Operation	8
	Optional Connections	11
	Additional Information	11
2. DISASSEMBLY		
2-1.	Rear Cover Removal	13
2-2.	Service Position	13
2-3.	Picture Tube Removal	14
3. SET-UP ADJUSTMENTS		
3-1.	Beam Landing	15
3-2.	Convergence	16
3-3.	Screen (G2), Drive, White Balance, Sub Colour and Sub Brightness	18
4. CIRCUIT ADJUSTMENTS		
4-1.	Electrical Adjustments	19
4-2.	Test Mode 2	20
4-3.	BE-4A Self Diagnostic Software	22
5. DIAGRAMS		
5-1.	Block Diagram	23
5-2.	Circuit Boards Location	26
5-3.	Schematic Diagrams and Printed Wiring Boards	26
	*A Board	31
	*C Board	35
	Semiconductors	37
6. EXPLODED VIEWS		
6-1.	Chassis	38
7. ELECTRICAL PARTS LIST		40

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

ATTENTION !!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHASSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE.
LE CHÁSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND, IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

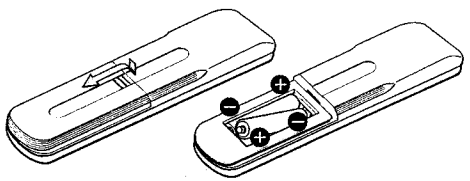
ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES VUES EXPLOSÉES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE PUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

Step 1

Inserting the Batteries into the Remote Commander



Step 2

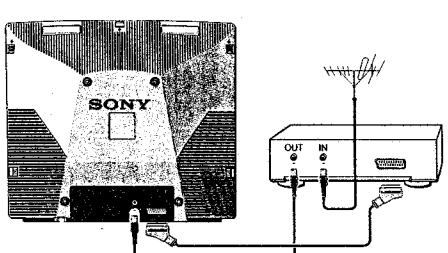
Connecting the Aerial

If you connect a VCR, skip to step 3.

Connect an external aerial to the socket ⊤ Y.

Step 3

Connecting a VCR



- It is recommended to tune in the VCR signal to programme number "0". For details, see "Presetting Channels Manually" on page 12.

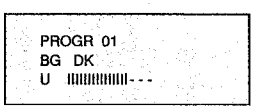
Step 4

Presetting Channels Automatically

TV searches for all available channels. If manual tuning is preferred see Menu option - Presetting Channels Manually.

1 Plug into mains.
Press power switch ⏻ X on TV set.

2 Press and hold ⏭ T on TV set for 2 seconds.
Auto tuning starts and screen shows.



Note • When Auto tuning stops the programme on position 1 is seen.

TV Operation

This section explains functions used whilst watching TV. Most operations are carried out using the Remote Commander.

To	Press
Switch on	⏻ X on TV
Switch off temporarily	⏻ K *TV is now in standby mode, ⏻ indicator W on TV lights.*
Switch on again	▢ C, PROGR +/- P V or any number button D
Switch off completely	⏻ X on TV *To save energy we recommend switching off completely when TV is not in use.*
Select programmes	PROGR +/- P V or number buttons D *For double digit numbers press -/-- E then the number e.g. For 23, press -/-- E then 2 and 3.*
Display the programme number	M *Press again to make programme number disappear.*
Adjust the volume	+/- J U
Mute the sound	A *Press again to restore sound.*
View video input	S *Press again to return to TV programme.*
View programmes in 16:9 mode	F *Press again to return to 4:3 mode.* **Note** • F is to be used to optimise the viewing of 16:9 signals, which will be available in the future.

Viewing Teletext

Teletext is an information service broadcast by TV stations.

1 Select the channel which carries the teletext service you wish to receive.

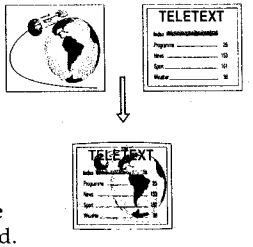
2 Press B to switch on teletext.

3 Input three digits for the page number using the programme number buttons D or PROGR +/- P V.

4 Press ▢ C to switch off teletext.

Note • Teletext errors may occur if the broadcasting signals are weak.

Using Other Teletext Functions



Superimposing teletext on the TV

Press B once in teletext mode or twice in TV mode to superimpose teletext on the TV screen.
Press B again to cancel superimposing.

Freezing a teletext subpage

Press L (HOLD) to freeze the subpage. Freezing the page prevents the information that is displayed from being updated.
Press L to cancel HOLD and allow update to continue.

Revealing concealed information (eg: answers to a quiz)

Press ? M to reveal information.
Press again to conceal the information.

Using colour buttons to access pages

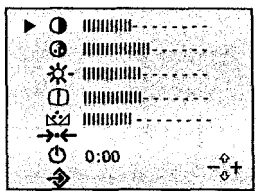
When the colour coded menu appears at the bottom of a page, press the colour button (red, green, blue or yellow) H G I O to access the corresponding page.

Note • A programme status message in a blue box may appear when you change programmes (depends on broadcasters).

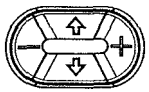
Use buttons on Remote Commander to control Menu screen.

MENU @
Menu Screen
on/off

Green G
scroll up



Red H
decrease



Yellow O
increase/confirm(OK)

Blue I
scroll down

Adjusting the Picture

1 Press MENU N.

2 Press green G or blue I button to select the item you wish to change.

Symbol	Item	- Effect +	
◑	Picture	Less	More
◕	Colour	Less	More
☼	Brightness	Darker	Brighter
◫	Sharpness	Softer	Sharper
◪	Hue	Reddish	Greenish

Note • Hue is available only when NTSC signal is input.

3 Press red H or yellow O button to change levels.

4 Press MENU N to return to normal TV screen.

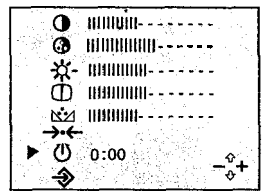
Note • To reset to factory preset picture levels, press green G or blue I button to select →•← and press yellow (OK) O button.

Using the Sleep Timer

The TV may be set to switch to the standby mode automatically after a length of time chosen by you. You may set the time in 30 minutes steps up to 4 hours.

1 Press MENU N.

2 Press green G or blue I button to select ⏻.



3 Press red H or yellow O button to set time delay.
0.00 (OFF) 0.30 1.00 1.30 .... 4.00

4 Press MENU N to return to normal TV screen.
When watching TV, press I+M to display time remaining.

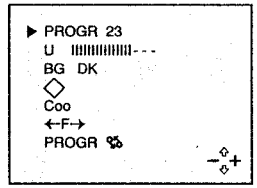
Presetting Channels Manually

Up to 60 programme positions are available for presetting channels.

1 Press MENU Ⓝ.

2 Press green Ⓖ or blue Ⓘ button to select ⇨ and press yellow (OK) Ⓞ button.

3 Select programme number using PROGR +/- ⓅⓋ or the number buttons Ⓓ.



4 Press green Ⓖ or blue Ⓘ button to select TV system (BG or DK) if necessary and press red Ⓗ or yellow Ⓞ button to change TV system.

5 Press green Ⓖ or blue Ⓘ button to select tuning bar (||||||····) and press red Ⓗ or yellow Ⓞ button to start channel search. When a channel is found the tuning bar stops moving and you see the picture.

6 If you want to store, press green Ⓖ or blue Ⓘ button to select ◇ and press yellow (OK) Ⓞ button. If you do not want to store, press red Ⓗ or yellow Ⓞ button to continue search.

7 Repeat steps 3 to 6 for all other channels.

8 Press MENU Ⓝ to return to normal TV screen.

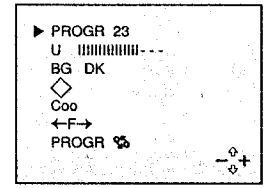
Skipping Programme Positions

You can skip unused programme positions when selecting channels with the PROGR +/- ⓅⓋ buttons. You can still select them, however, using the number buttons Ⓓ.

1 Press MENU Ⓝ.

2 Press green Ⓖ or blue Ⓘ button to select ⇨ and press yellow Ⓞ button.

3 Select programme number you want to skip using PROGR +/- ⓅⓋ button or number buttons Ⓓ.



4 Press green Ⓖ or blue Ⓘ button to select Coo and press yellow (OK) Ⓞ button.

5 Press green Ⓖ or blue Ⓘ button to select ◇ and press yellow (OK) Ⓞ button to store.

6 Repeat steps 3 to 5 for other unused programme positions.

7 Press MENU Ⓝ to return to normal TV screen.

Note • To restore a skipped programme number, refer to 'Presetting Channels Manually'.

Fine-Tuning Channels

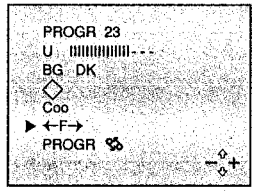
You can fine tune a stored channel if necessary.

1 Select the channel you wish to fine tune.

2 Press MENU Ⓝ.

3 Press green Ⓖ or blue Ⓘ button to select ◈ and press yellow (OK) Ⓞ button.

4 Press green Ⓖ or blue Ⓘ button to select ←F→ and use red Ⓗ or yellow Ⓞ button to adjust tuning.



5 Press green Ⓖ or blue Ⓘ button to select ◇ and press yellow (OK) Ⓞ button to store.

6 Press MENU Ⓝ to return to normal TV screen.

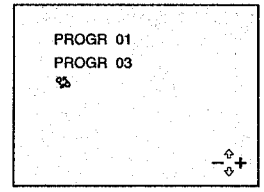
Exchanging Programme Positions

After tuning you may wish to rearrange the programme positions.

1 Press MENU Ⓝ.

2 Press green Ⓖ or blue Ⓘ button to select ◈ and press yellow (OK) Ⓞ button.

3 Press green Ⓖ or blue Ⓘ button to select PROGR and press yellow (OK) Ⓞ button.



4 Press red Ⓗ or yellow Ⓞ button to select the first programme position.

5 Press the blue Ⓘ button.

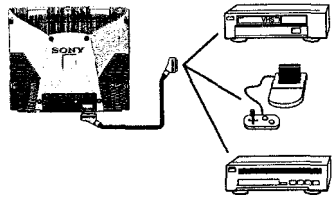
6 Press the red Ⓗ or yellow Ⓞ button to select the second programme position.

7 Press blue Ⓘ button to select and press yellow (OK) Ⓞ button to exchange.

8 Repeat steps 4 to 7 for other programme positions.

9 Press MENU Ⓝ to return to normal TV screen.

Using the Connectors



Your TV has one 21-pin connector ❑ on the rear of the set and two connectors (phono jacks : video, audio) ❑ on the front of the set. You can connect optional audio or video equipment to these connectors, such as a VCR, video games or a video disc player.

1 Press L S to view the video input signal.

2 Press L S or C to return to normal TV screen.

- To avoid picture distortion, do not connect equipment to the 21-pin connector and the front connectors at the same time.

Connecting Headphones

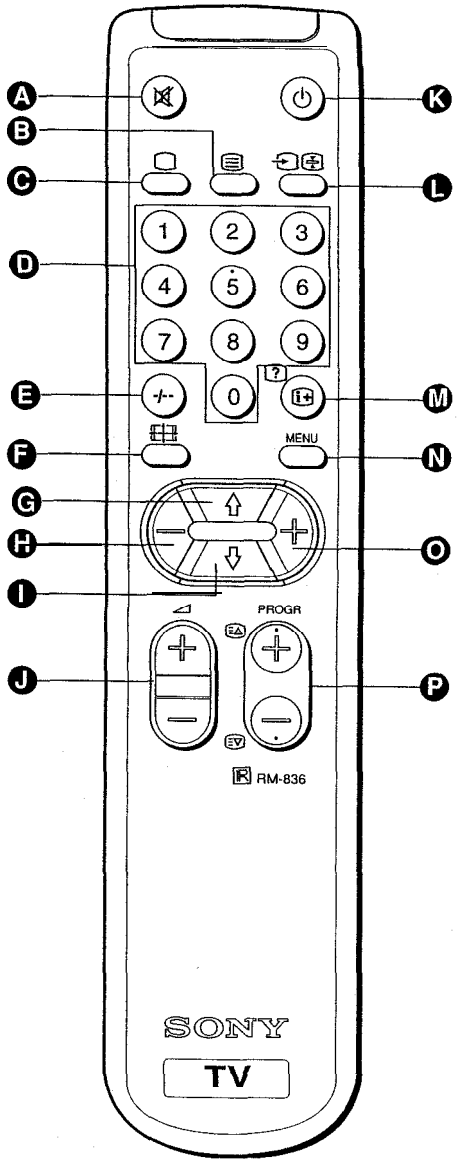
Plug in the headphones to the ❑ socket on the front of the TV set to mute the sound from the speaker.

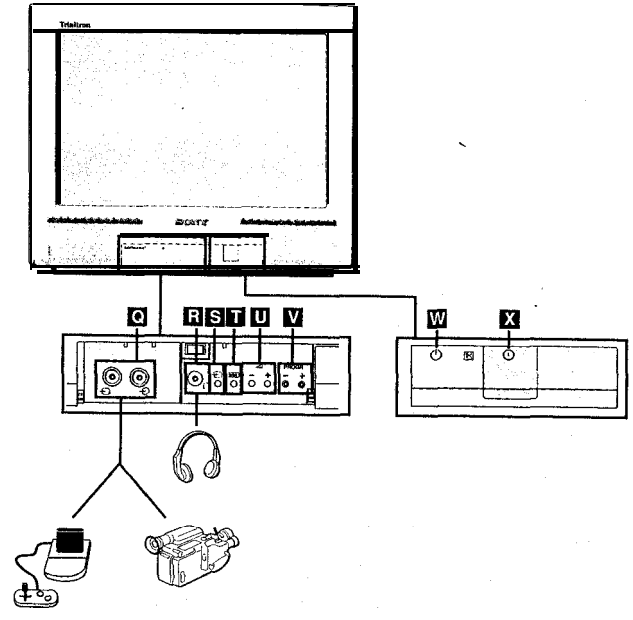
Troubleshooting

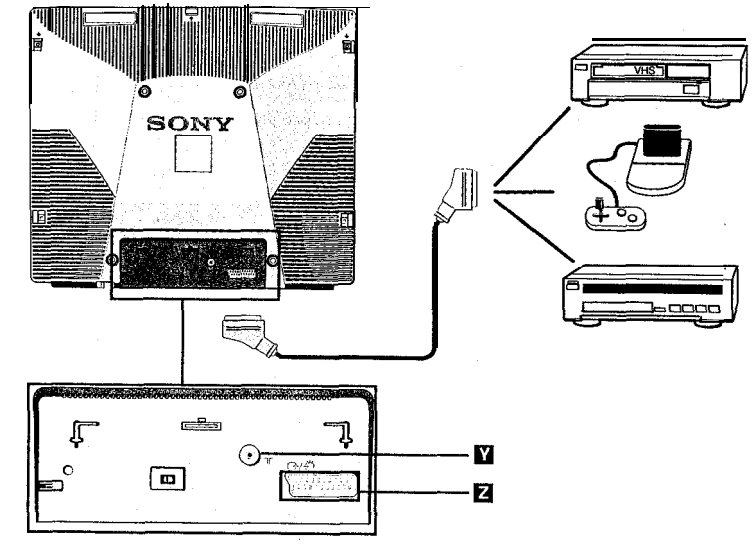
Here are some simple solutions to the problems which affect the picture and sound.

Problem	Solution
No picture, screen is dark, no sound	• Plug the TV in. • Press ⏻ X on the TV. • Press C or the programme number D on the remote commander if ⏻ indicator ❑ is on. • Check the aerial connection. • Check that the video source is on. • Turn the TV off for 3 or 4 seconds and then turn it on again using ⏻ X.
Poor or no picture (screen is dark, sound is good)	• Press MENU N and adjust brightness picture and colour levels.
Good picture, no sound	• Adjust the volume + / – J U . • Disconnect any headphones. • Press A if is displayed on the screen. • Press MENU N and select appropriate TV system.
No colour on colour programmes	• Press MENU N and adjust colour balance. • Press MENU N and reset to factory settings.
Distorted picture when you change programmes or select teletext	• Turn off the equipment connected to the 21-pin connector ❑ when this equipment is not in use.
Remote commander does not function	• Replace the batteries.

- **If you continue to have these problems, have your TV serviced by qualified personnel.**
- **NEVER open the casing yourself.**


A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
1
2
3
4
5
6
7
8
9
0
MENU
PROGR
RM-836
SONY
TV

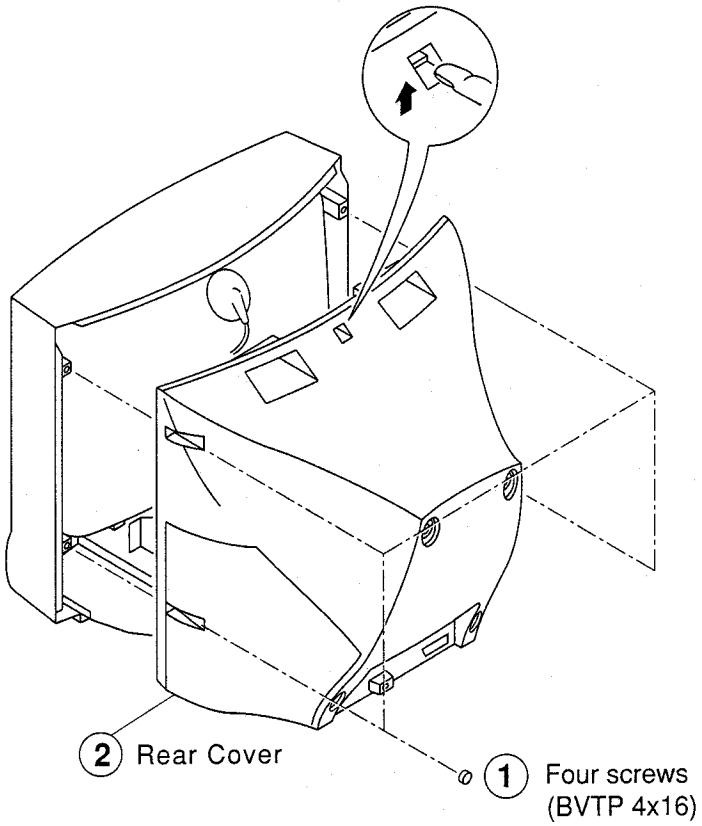

Q
R
S
T
U
V
W
X


SONY
VHS
Y
Z

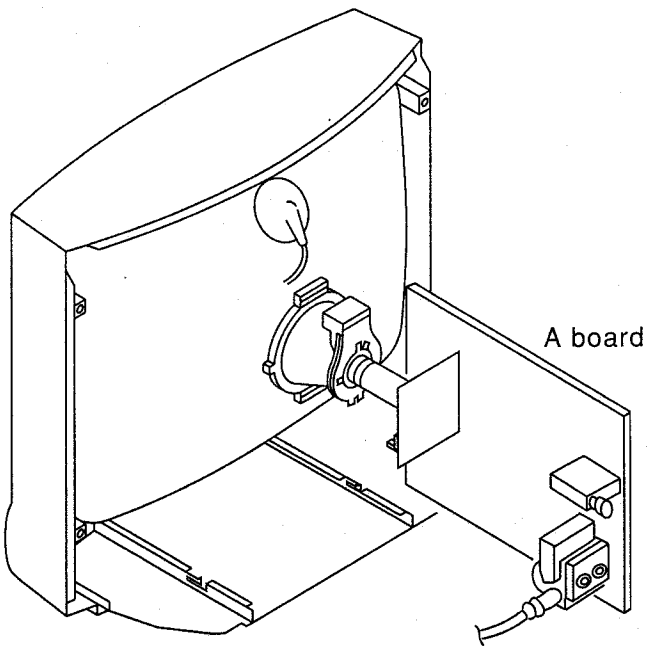
SECTION 2

DISASSEMBLY

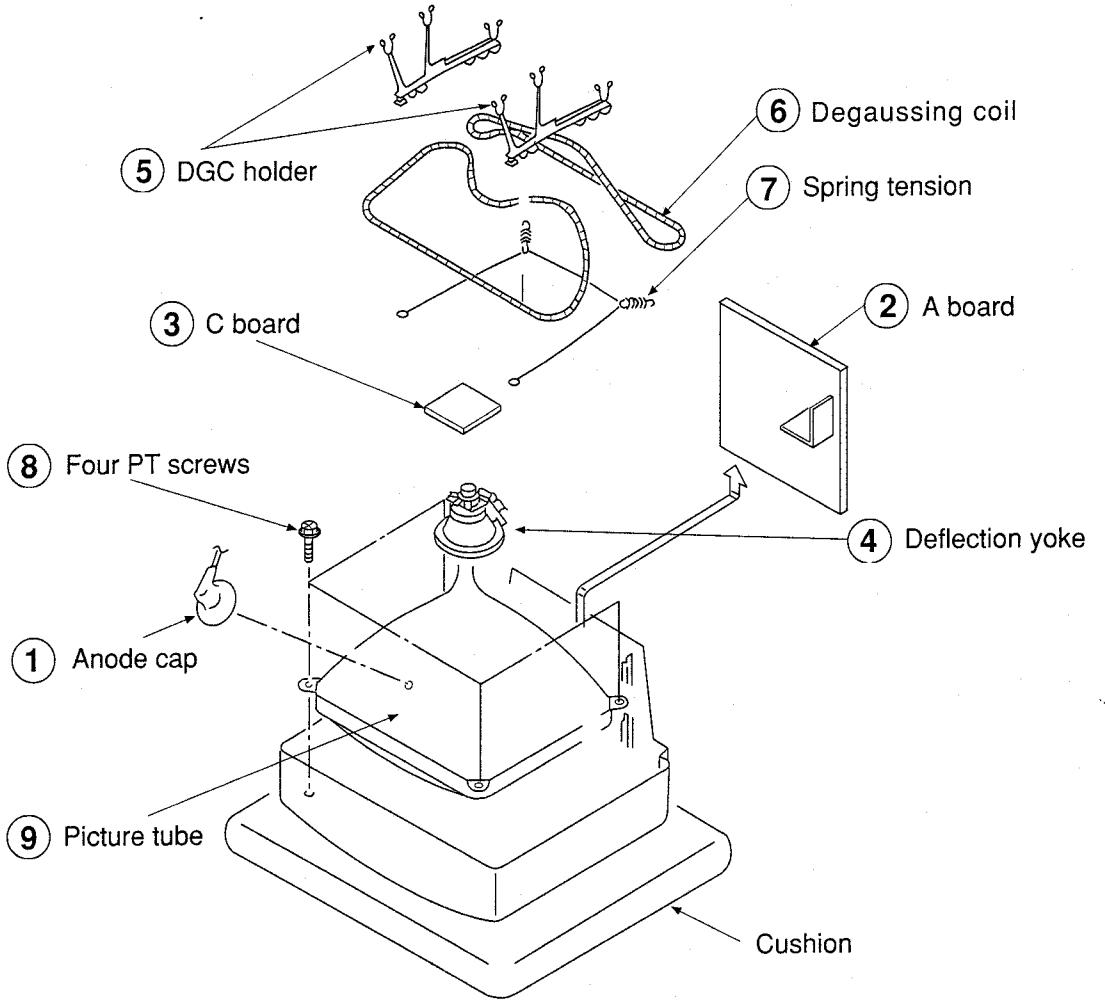
2-1. REAR COVER REMOVAL



2-2. SERVICE POSITION



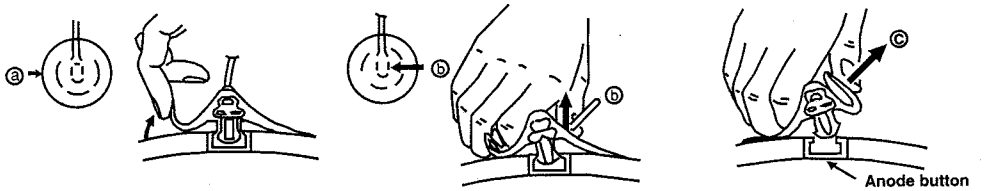
2-3. PICTURE TUBE REMOVAL



• REMOVAL OF ANODE-CAP

Note: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

* **REMOVING PROCEDURES.**



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ

② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ

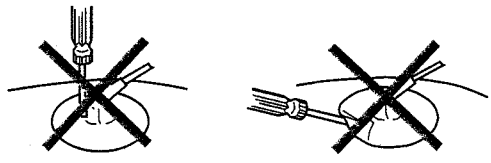
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ⓒ

• HOW TO HANDLE AN ANODE-CAP

① Don't damage the surface of anode-cap with sharp shaped material !

② Don't press the rubber hardly not to hurt inside of anode-caps !
A metal fitting called as shatter-hook terminal is built into the rubber.

③ Don't turn the foot of rubber over hardly !
The shatter-hook terminal will stick out or damage the rubber.



SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with the rated power supply voltage, unless otherwise noted.

The Contrast and Brightness controls should be set as follows unless otherwise noted:

◑ **CONTRAST** control 80%
(or Normal by commander)
☼ **BRIGHTNESS control 50%**

Perform the adjustments in the following order:
1. Beam Landing
2. Convergence
3. Screen (G2), Drive, White Balance, Sub Colour and Sub Brightness.
4. Focus

Note: Test Equipment Required.
1. Colour bar/Pattern Generator
2. Degausser
3. DC Power Supply
4. Digital multimeter
5. Oscilloscope

Preparation:
- In order to reduce the influence of external magnetic forces on the picture tube, face the TV set in an easterly or westerly direction.
- Turn the power switch for the unit ON and erase the magnetic force using a degausser.

3-1. BEAM LANDING

Demagnetize with a degausser.
1. Input an all white raster signal from the pattern generator.
   CONTRAST } normal
   BRIGHTNESS }
2. Switch the raster signal of the pattern generator to Red.
3. Move the deflection yoke backward, and adjust with the purity control so that Red is at the centre and the Blue and Green are evenly spaced at the sides. see (Fig. 3-l - 3-3)
4. Move the deflection yoke forward, and adjust so that the entire screen becomes Red. (Fig. 3-l)
5. Switch the raster signal to Blue and then Green to confirm the condition.
6. When the position of the deflection yoke has been determined, tighten it with the deflection yoke mounting screw.
7. When the landing at the comers is not correct, adjust by using disk magnets. (Fig. 3-4)

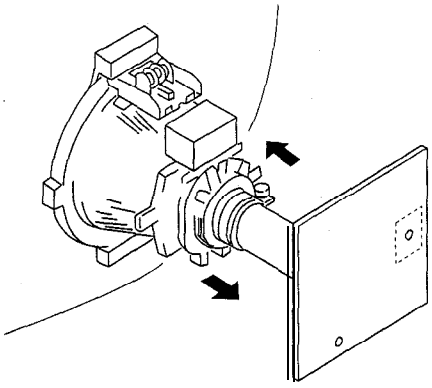


Fig. 3-1

Fig. 3-2

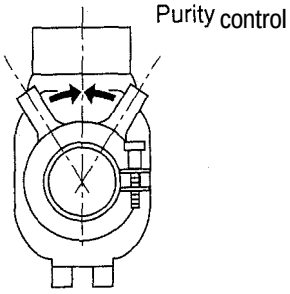


Fig. 3-3

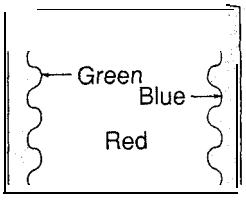
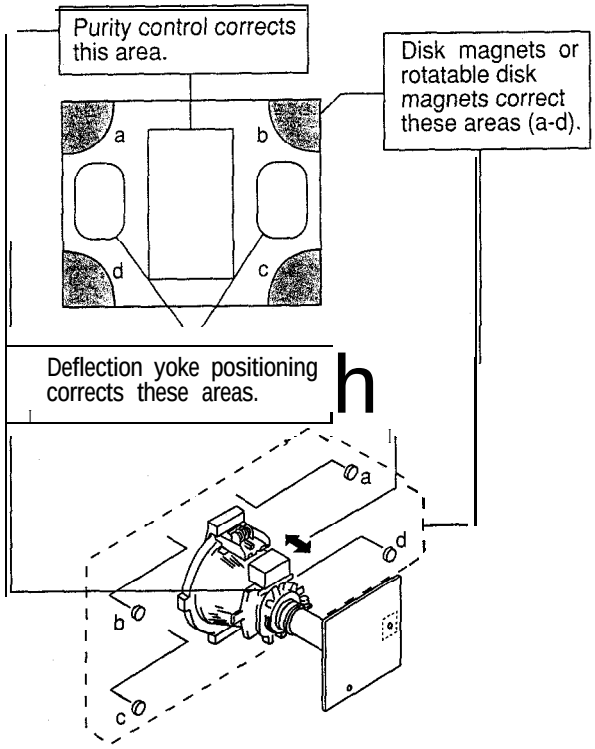


Fig. 3-4

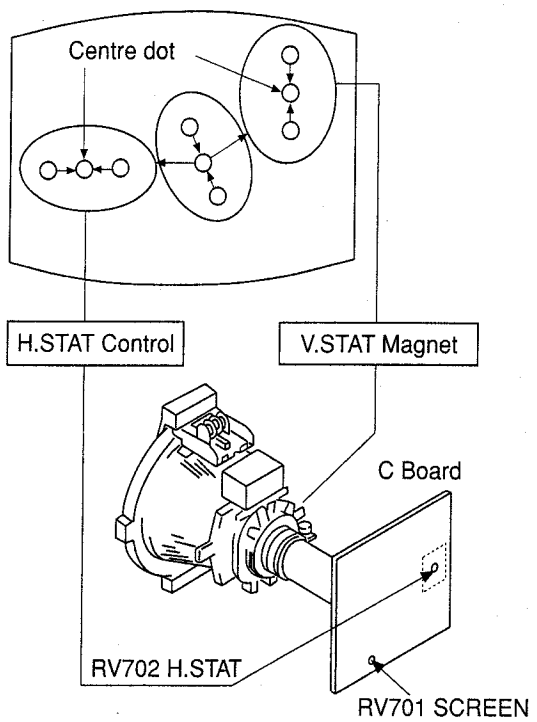


3-2. CONVERGENCE

Preparation:

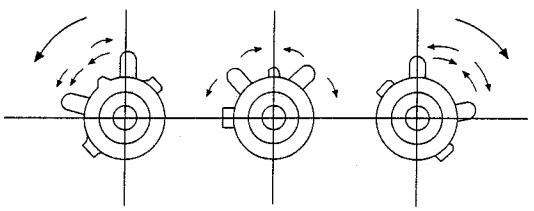
- Before starting, perform FOCUS, H.SIZE, and V.SIZE adjustments.
- Set the BRIGHTNESS control to minimum.
- Input a dot pattern from the pattern generator.

(1) Horizontal and Vertical Static Convergence

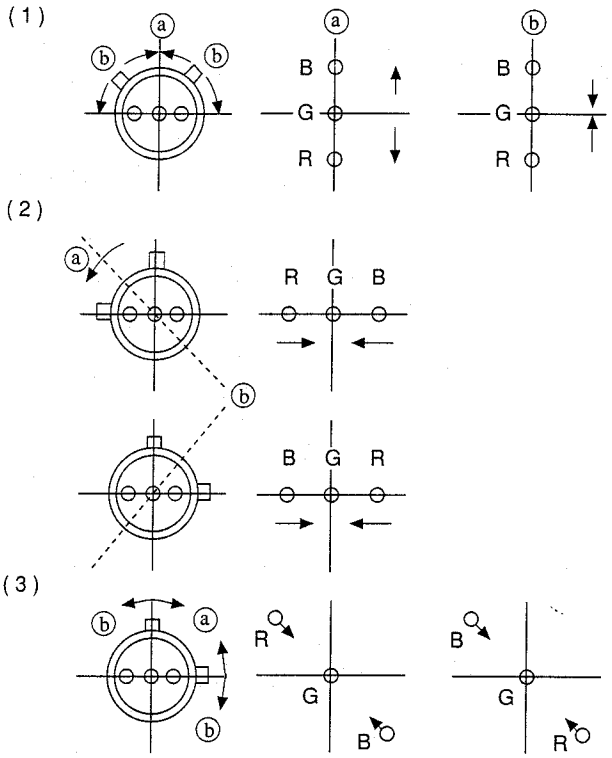


1. Adjust the H.STAT control to converge the Red, Green and Blue dots at the centre of the screen. (Horizontal movement)
2. Adjust the V.STAT magnet to converge the Red, Green and Blue dots at the centre of the screen. (Vertical movement)

- If the horizontal dots cannot coincide with variable range of the H.STAT convergence, adjust together with the V.STAT convergence while tracking.
  (Adjust the convergence by tilting the V.STAT convergence or by opening or closing the V.STAT convergence.)



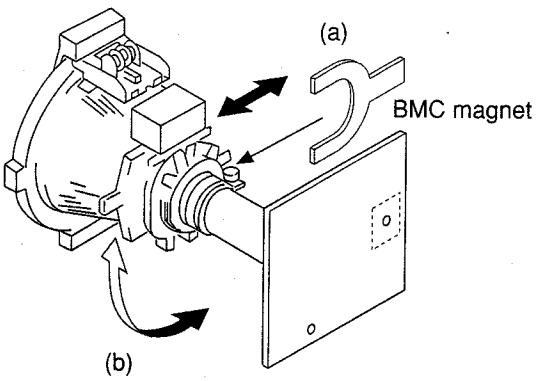
3. When the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the Red, Green and Blue dots move as shown below.



If the Red and Blue dots do not converge with the Green dots, perform the following steps.

1. Move the BMC magnet (a) to correct for insufficient H.static convergence.
2. Rotate the BMC magnet (b) to correct for insufficient V.static convergence.

In either case, repeat the Beam Landing Adjustment.

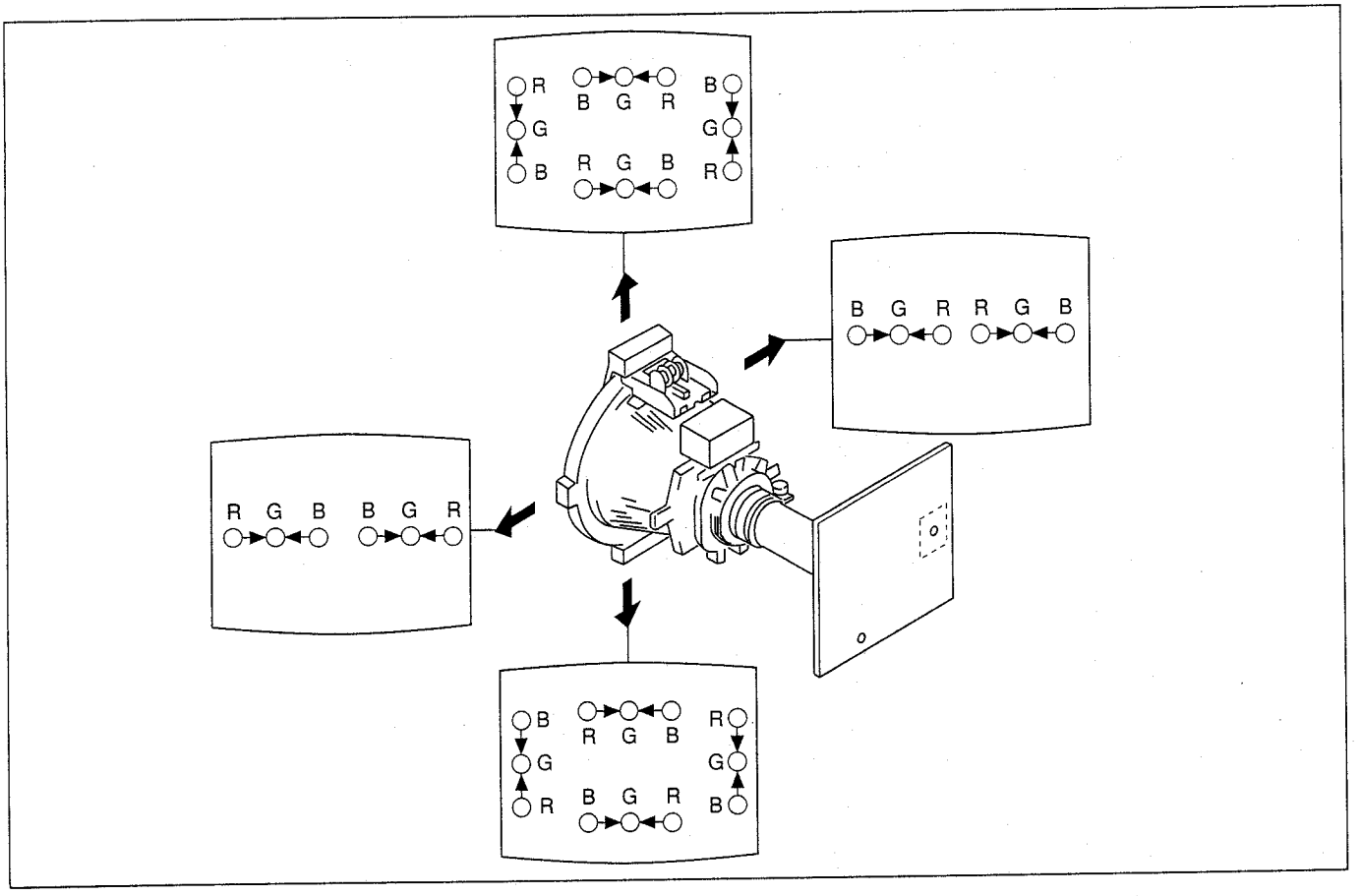


(2) Dynamic Convergence Adjustment

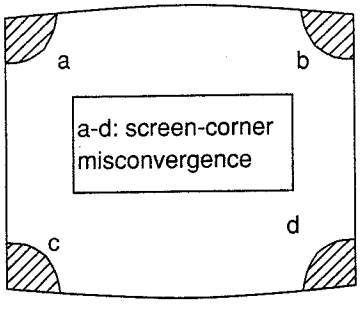
Preparation:

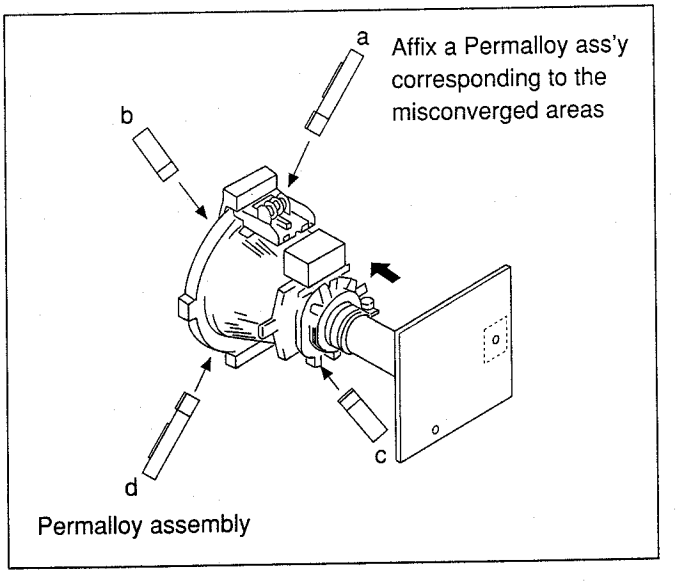
- Before starting, perform the Horizontal and Vertical static convergence adjustment.

1. Slightly loosen the deflection yoke screw.
2. Remove the deflection yoke spacers.
3. Move the deflection yoke for best convergence as shown below.
4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.

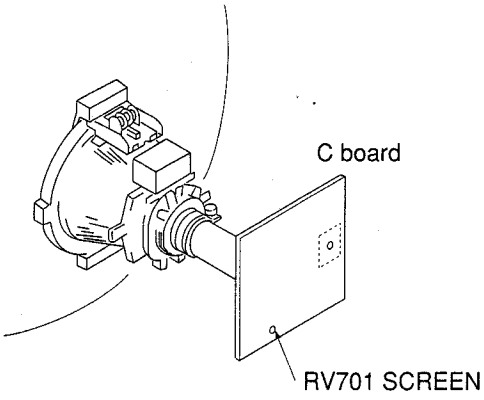


(3) Screen-corner Convergence.





3-3. SCREEN (G2), DRIVE, WHITE BALANCE, SUB COLOUR and SUB BRIGHTNESS.

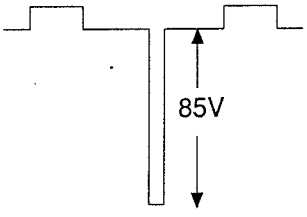


Screen (G2) setting

1. Input a 0 IRE (Black Level) signal from the pattern generator.
2. Enter into the Service Mode "Test""Test" and 38.
3. Adjust RV701 until the Down arrow is displayed.
4. Adjust RV701 until the Down arrow just disappears.
5. Press the TV Button on the Remote Commander to store the data.

Drive Level

1. Input a Video signal containing a small area of 100% white on a black background.
2. Connect an oscilloscope to Pin (10) of J701 (R OUT) on the C Board.
3. Set the Picture to maximum using "Test""Test" and 01.
4. Enter into the Service mode (Adjust Menu).
5. Using the Blue and Green buttons select "RED HWB".
6. Using the Red and Yellow buttons on the Remote Commander adjust until the oscilloscope waveform has an amplitude of 85V.

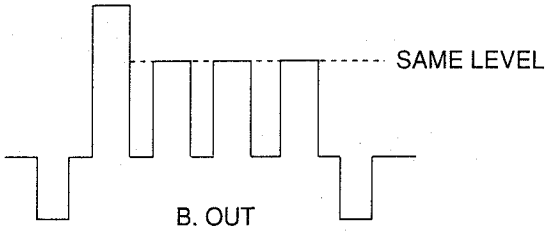


White Balance Adjustment

1. Input an all white pattern from the pattern generator.
2. Adjust the Colour and Brightness controls to the standard level.
3. Enter into the Service Mode.
4. Adjust the Green HWB and Blue HWB so that the White Balance becomes optimum.

Sub Colour Adjustment

1. Input a PAL colour bar pattern from the pattern generator.
2. Connect an oscilloscope to Pin (8) of J701 (B OUT) on the C Board.
3. Enter into the Service Mode "Test""Test" and 22.
4. Using the Red and Yellow buttons on the Remote Commander adjust until the oscilloscope waveform becomes as follows :



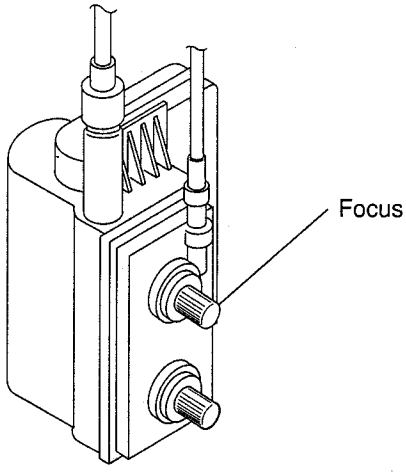
Note : If the TV is able to receive PAL and SECAM transmissions, repeat the above procedure using a Secam colour bar signal.

Sub Brightness Adjustment

1. Input a Philips pattern from the pattern generator.
2. Enter into the Service Mode "Test""Test" and 23.
3. Using the Red and Yellow buttons on the Remote Commander adjust until the 0 IRE of the grey scale and the cut off are only slightly visible on the screen.

3-4. FOCUS

1. Receive a television broadcast signal.
2. Normalize the picture setting.
3. Adjust the focus control on the flyback transformer for the best focus at the centre of the screen.
   Bring only the centre area of the screen into focus, the magenta-ring appears on the screen. In this case, adjust the focus to optimize the screen uniformly.



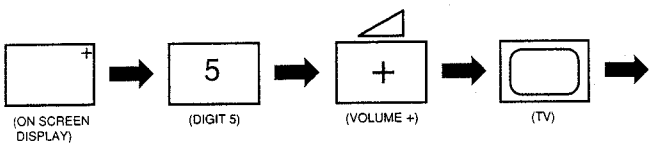
SECTION 4
CIRCUIT ADJUSTMENTS

4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied Remote Control Commander RM-836.

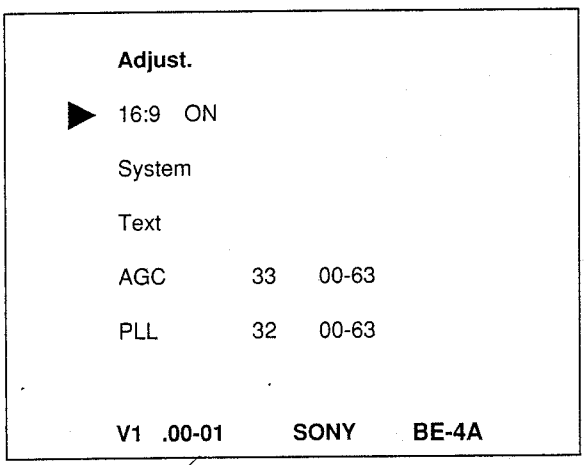
HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power of the set and enter into stand-by mode.
2. Press the following sequence of buttons on the Remote Control Commander.



"TT-- " will appear in the top right corner of the screen Other status information will also be displayed.

3. Press the MENU button on the Remote Commander to obtain the menu on the screen.



4. Press the Blue (Next) or Green (previous) buttons to select the adjustment item from the table.
5. Press the Yellow (+) or Red (-) buttons to change the data as required.
6. Turn off the power to quit the service mode when adjustments are completed.

Range of adjustments available from the on screen menu system.

Adjustment	Set	Range
16:9 Off	Select	ON/OFF
System	Select	BG-L, BG-DK UK, Eire, BG
Text	Select	EAST/WEST
AGC	Adj.	00 - 63
PLL	Adj.	00 - 63
B&W Delay	Adj.	00 - 63
Ver Size	Adj.	00 - 63
Ver, Breath	00	00 - 63
Par, Ampl	00	00 - 63
Par, Tilt	32	00 - 63
V, Linear	Adj.	00 - 63
Corn, corr	00	00 - 63
V, Cen or EW	Adj.	00 - 63
V, Position	42	00 - 63
H, Centre	Adj.	00 - 63
Blue HWB	Adj.	00 - 63
Green HWB	Adj.	00 - 63
Red HWB	Adj.	00 - 63

4-2. TEST MODE 2:

TT -- Mode is available by pressing the Test button twice, O.S.D 'TT --' appears. The functions described below are available by pressing two digits. To release the 'TT --' mode, press 0 twice, press 'TEST' , press 'TV' or switch the TV into Stand-by mode.

00	Switch 'TT--' Mode off.
01	Set picture level to maximum.
02	Set picture level to minimum.
03	Set volume to 35%.
04	Set volume to 50%.
05	Set volume to 65%.
06	Set volume to 80%.
07	Ageing condition (picture max., brightness max.).
08	Shipping condition (Analog values are RESET to factory setting, Prog 1 is selected, TT--mode switched off, Vol = 35%).
09	Dummy.
10	No function.
11	Dummy
12	Text Picture Level Offset (Enable/Disable)
13	Select Odd / Even field for Non-interlaced teletext.
14	Select Interlaced / Non-interlaced teletext display.
15	Read factory setting from ROM to NVM - Reads Volume, Brightness, Picture, Hue, Sharpness and Colour values from ROM to the actual used values (Last Power Memory).
16	No function
17	Enable / Disable Sharpness Operation.
18	Enable / Disable Teletext Operation.
19	Enable / Disable NTSC Operation.
20	No function.
21	Sub Picture.
22	Sub Colour (Pal / Secam Different Stores)
23	Sub Brightness.
24	Destination System BG/L.

25	Destination Systems BG/L.
26	Destination Systems I.
27	Destination System I/I'.
28	Destination BG only.
29	Dummy.
30	No function.
31-32	Dummy.
33	Auto AGC Adjust.
34	Auto PLL Adjust.
35-37	Dummy.
38	Enter G2 adjustment mode.
39	Dummy.
40	No function.
41	Re-initialise NVM.
42	Dummy.
43	Re-initialise Geometry settings.
44-47	Dummy
48	Set NVM testbyte to 44h in NVM.
49	Erase NVM testbyte
50	No function.

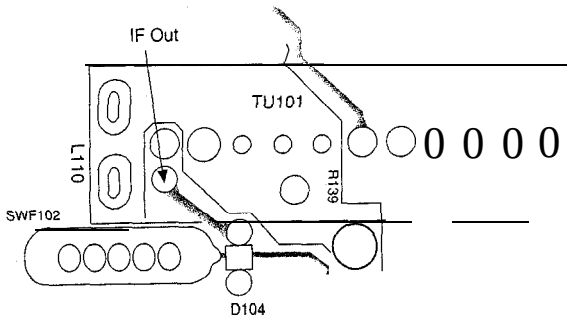
Note : For Test Modes 41 - 50, it is necessary to ensure that the TV is set to Prog 59.

IF ADJUSTMENT (AUTOMATIC)

1. Input a 38.9 MHz 100dBµ CW signal at the IF Out injection point.
2. Enter into service mode and press 34.
3. Connect a digital voltmeter to IClOl pin (23).
4. Check AFT 2.5V ±0.3V dc.
5. Press '00' on the Remote Commander.

SYSTEM L ADJUSTMENT (French Models)

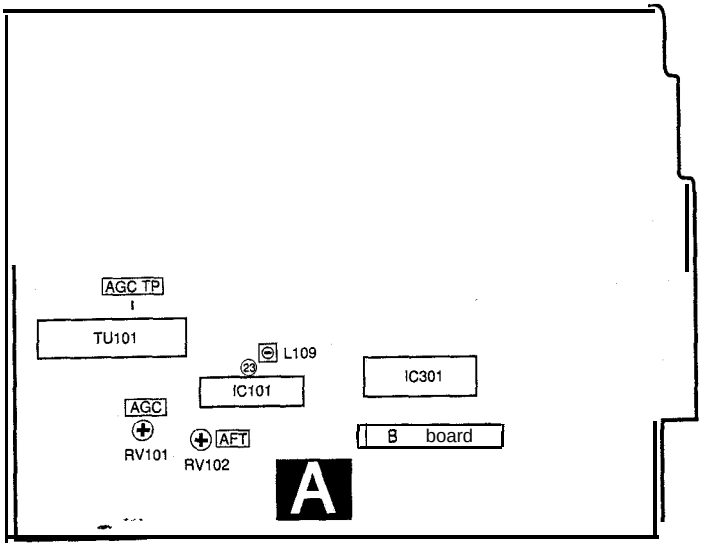
1. Input a 33.9MHz 100dBµ CW signal at the IF Out injection point.
2. From the On Screen Menu set System to L band 1.
3. Connect a digital voltmeter to IC101 pin (23).
4. Adjust RV102 AFT for 2.5V ±0.3V dc.



- A Board Print Side -

AGC ADJUSTMENT

1. Receive an off-air signal.
2. Enter into the Service adjust menu and select AGC.
3. Adjust the data using the Red and Yellow buttons on the Remote Commander so that there is no snow or cross - modulation visible on the screen.
4. Change the receiving off-air channel, and confirm the above status.



- A Board Component Side -

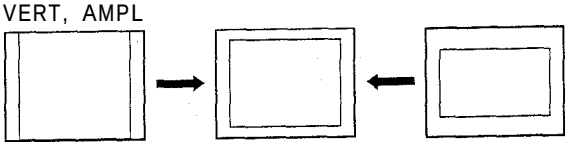
DEFLECTION SYSTEM ADJUSTMENT

1. Enter into the service mode.
2. Using the Blue or Green buttons select the Adjust item.
3. Press the Yellow button to enter the adjustment submenu.
4. Select and adjust each item in order to obtain the optimum image.

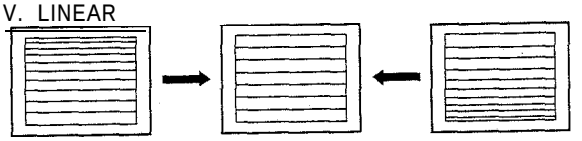
See Note on page 22

Adjustment	Set	Range
VERT, AMPL	Adj.	**00 - 63**
VER, BREATH	00	00 - 63
PAR, AMPL	00	00 - 63
PAR, TILT	32	00 - 63
V, LINEAR	Adj.	**00 - 63**
CORN, CORR	Adj.	**00 - 63**
V, CENTRE	Adj.	**00 - 63**
V, POSITION	42	00 - 63
H, CENTRE	Adj.	**00 - 63**

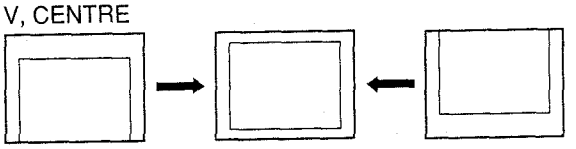
VERT, AMPL



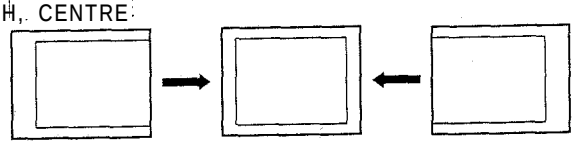
V. LINEAR



V, CENTRE



H, CENTRE



Fit the link as required to obtain the correct horizontal picture size.

4-3. BE-4A SELF DIAGNOSTIC SOFTWARE

The identification of errors within the BE-4A chassis is triggered in 1 of 2 ways :- 1: Bus busy or 2: Device failure to respond to I^2C. In the event of one of these situations arising the software will first try to release the Bus if busy (Failure to do so will report with a continuous flashing LED) and then communicate with each relevant device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the LED by a Series of flashes which must be counted (See Table 1), Non fatal errors are reported with this method.

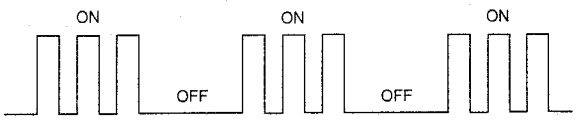
If a fatal error is found, the set will simply stay in whichever state it was when the error occurred, but if a non fatal error occurs the set will try to continue to operate.

Table 1

No of Flashes	Meaning
2	IC301 not acknowledging I^2C transmission, NVM OK.
3	IC301 FAULT (Not OK) - flags
4	IC301 - No H Flyback
5	IC301 - Stack Overflow.
6	Overvoltage / Overcurrent Protection (Pin 52) high.
7	IC002 not acknowledging I^2C transmission, IC301 OK.
8	IC002 and IC301 - No I^2C acknowledgment.
9	General I^2C Error (SDA or SCL being held low) (IC301, IC001, IC002, CN001)

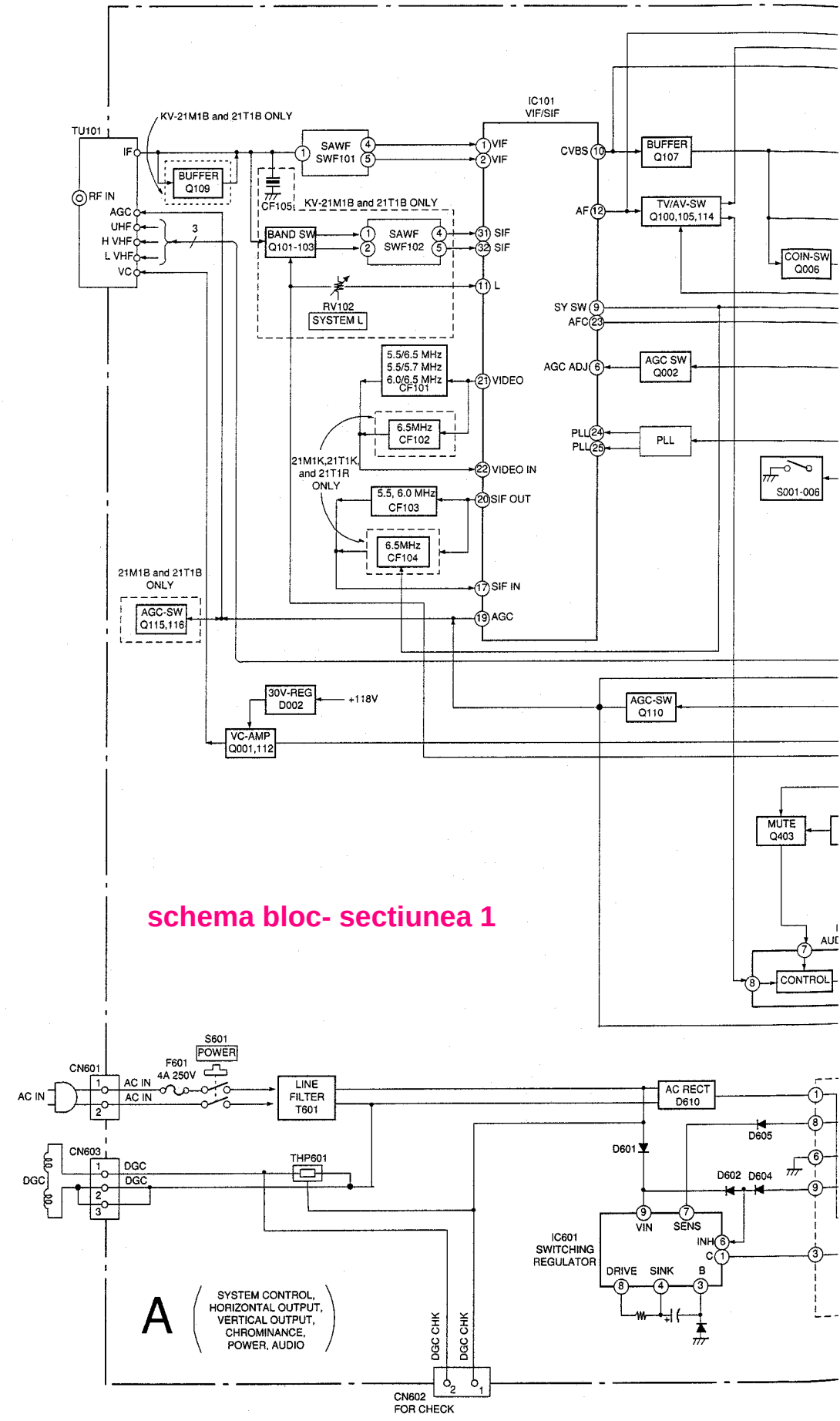
Flash Timing Example : e.g. error number 3

Stby LED

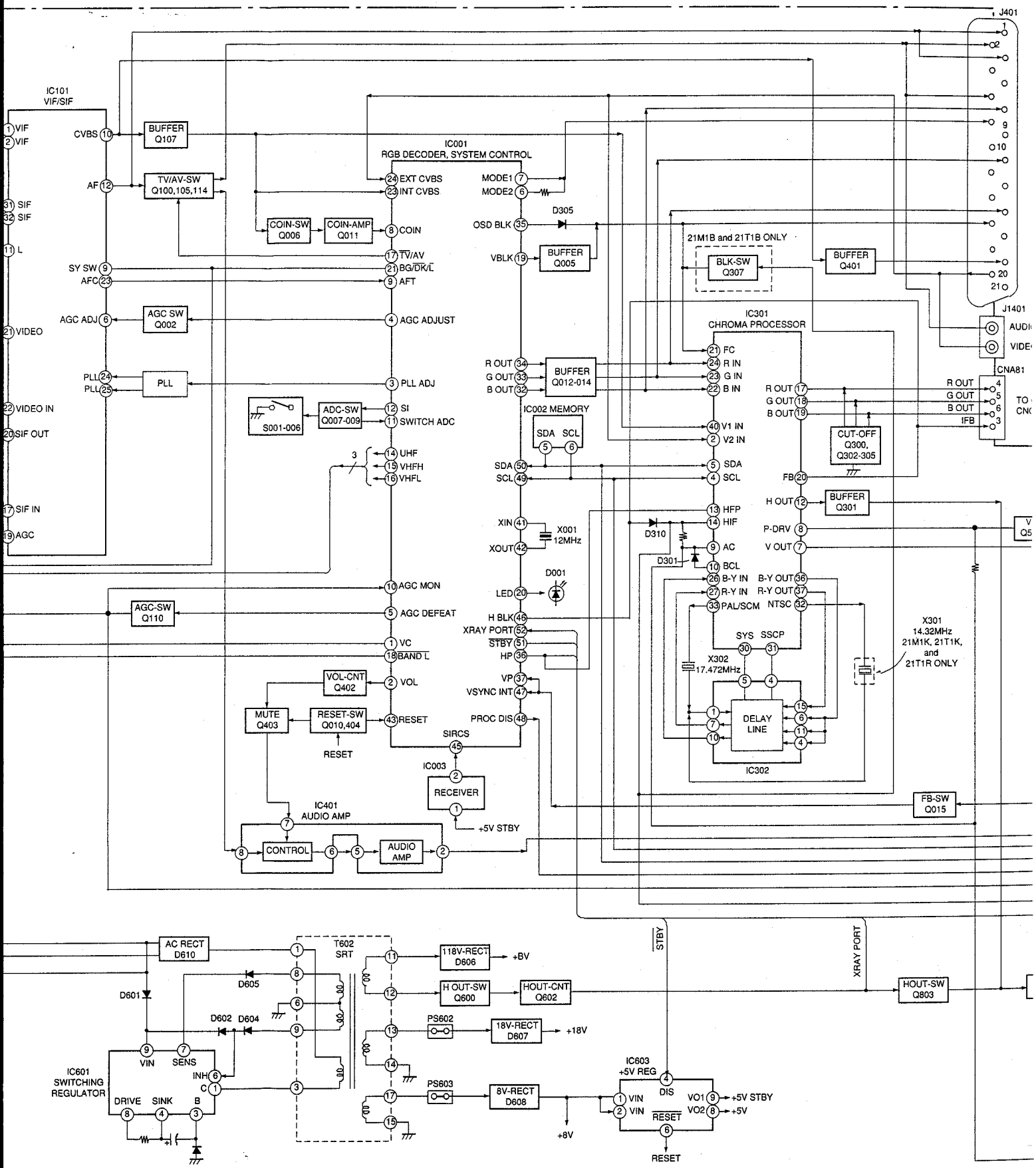


Note : Deflection System Adjustments should not be carried out whilst using an NTSC (60Hz) signal, or if the signal is unlocked.

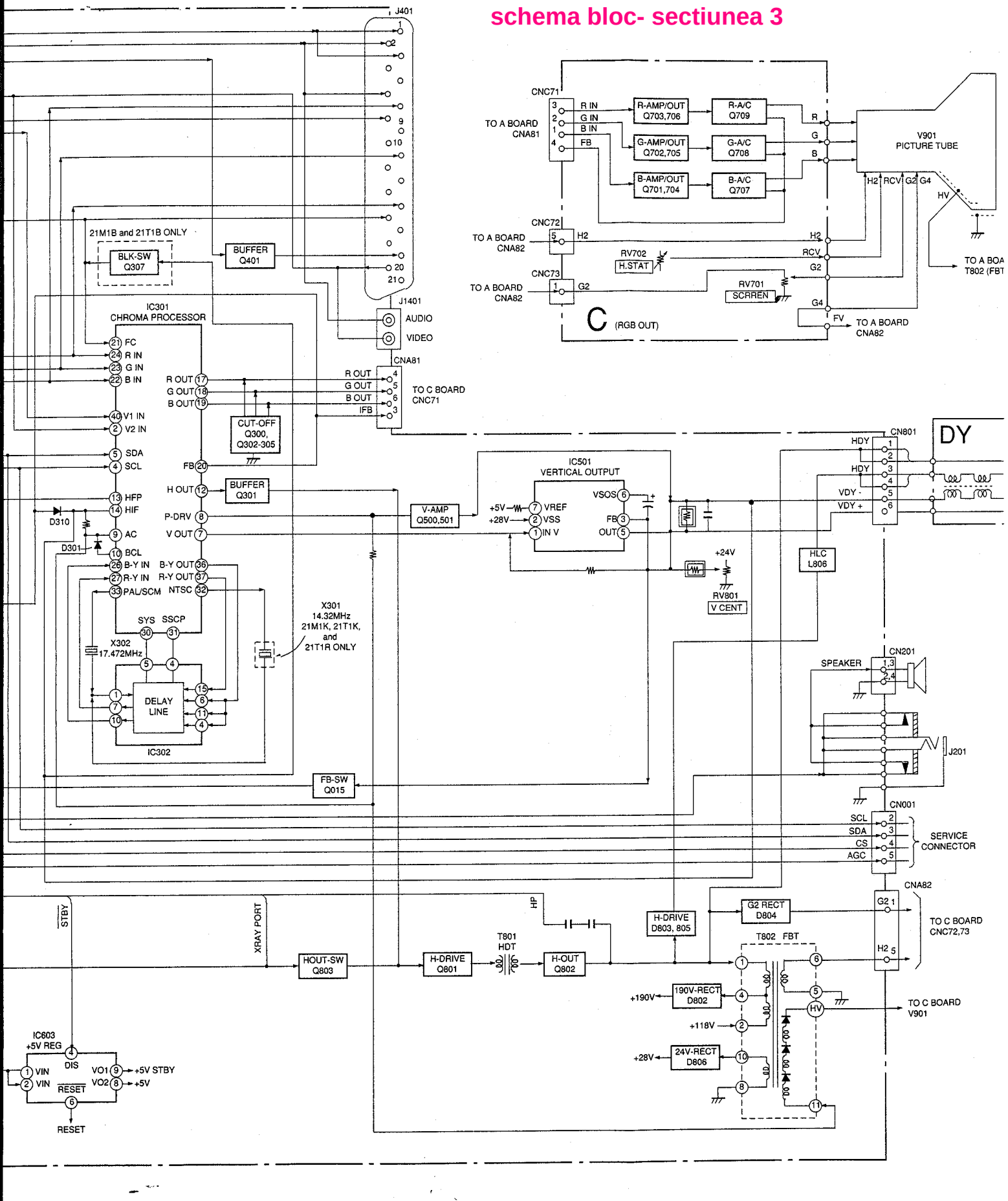
SECTION 5
DIAGRAMS



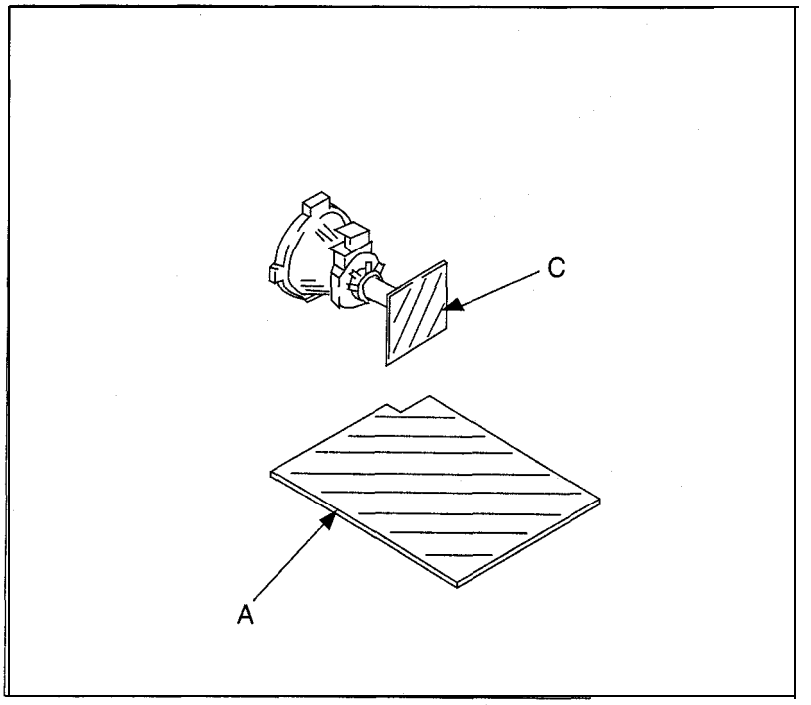
schema bloc- sectiunea 2



schema bloc- sectiunea 3



5-2. CIRCUIT BOARDS LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.
  k = 1000 , M = 1000K
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5 mm
Rating electrical power ¼ W

- : nonflammable resistor.
- △ : internal component.
- ▭ : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊥ : earth - ground.
- ⏚ : earth - chassis.
- ⌗ : no mounted.

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part number specified.

Note : Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: ※	ADJUSTABLE RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STY ROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

- Readings are taken with a colour-bar signal input.
- Readings are taken with 10MΩ digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- ▬ : B+bus.
- : signal path. (RF)

A BOARD

IC

IC001	I-4
IC002	G-4
IC003	C-1
IC101	G-10
IC301	G-5
IC302	H-7
IC401	E-3
IC501	D-9
IC601	A-5
IC603	D-3

TRANSISTOR

Q001	H-8
Q002	I-4
Q005	H-2
Q006	H-9
Q007	G-1
Q008	F-1
Q009	E-1
Q011	H-8
Q012	G-3
Q013	F-3
Q014	G-2
Q015	G-4
Q016	F-3
Q100	F-2
Q101	G-11
Q102	G-11
Q103	G-11
Q105	F-2
Q107	H-9
Q109	G-10
Q110	H-5
Q111	G-8
Q112	G-12
Q113	G-9
Q114	F-2
Q115	F-10
Q116	F-9
Q300	F-7
Q301	F-6
Q302	F-7
Q303	G-7
Q304	F-7
Q305	G-7
Q306	G-8
Q307	F-8
Q308	H-7
Q401	H-10
Q402	F-2
Q403	F-3
Q404	F-4
Q600	D-6
Q602	D-6
Q801	E-6
Q802	C-9
Q803	E-5
Q804	C-7
Q805	B-7

DIODE

D001	D-1
D002	F-8
D003	C-1
D004	F-5
D005	G-4
D006	G-3
D014	I-4
D016	G-4
D100	F-3
D102	G-11
D104	G-11
D105	F-8
D106	F-8
D107	F-2
D109	F-9
D301	F-6
D302	F-7
D305	G-2
D307	G-11
D308	F-8
D310	F-5
D315	G-5
D401	H-12
D402	H-5
D403	H-12
D404	H-12
D405	H-12
D406	H-11
D407	G-12
D408	I-12
D409	F-3
D410	I-11
D412	I-2
D414	H-2
D501	E-8
D600	D-6
D601	A-6
D602	B-6
D603	A-5
D604	B-6
D605	B-6
D606	D-6
D607	E-6
D608	D-5
D610	B-4
D611	D-6
D612	E-5
D613	E-3
D614	F-3
D801	E-7
D802	A-8
D803	C-11
D804	B-10
D805	C-10
D806	A-11
D807	E-5
D809	A-8

VARIABLE RESISTOR

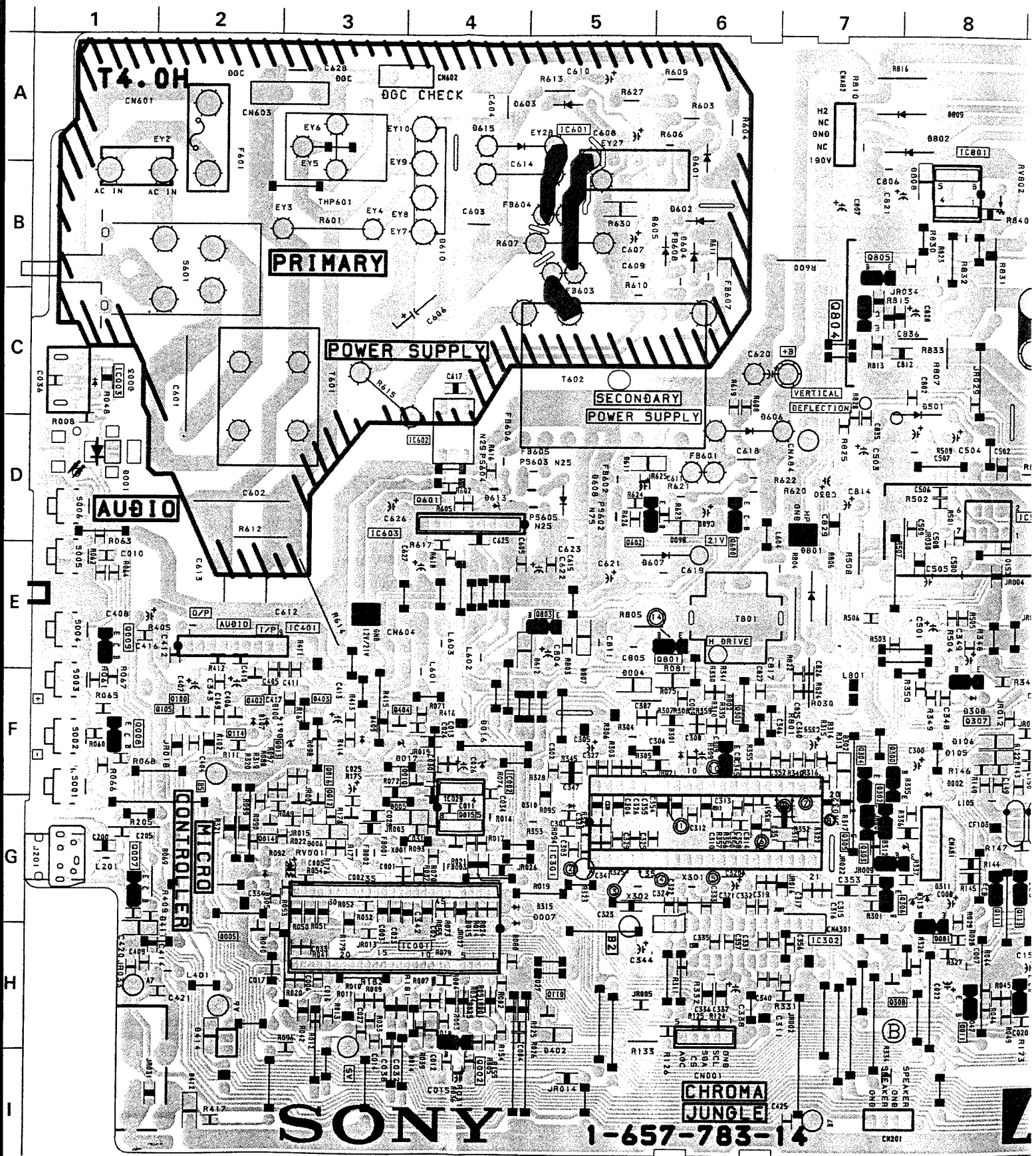
RV102	H-10
RV801	E-9

KV-21M1/T1 KV-21M1/T1

A SYSTEM CONTROL, HORIZONTAL OUTPUT, VERTICAL OUTPUT, CHROMINANCE, POWER, AUDIO

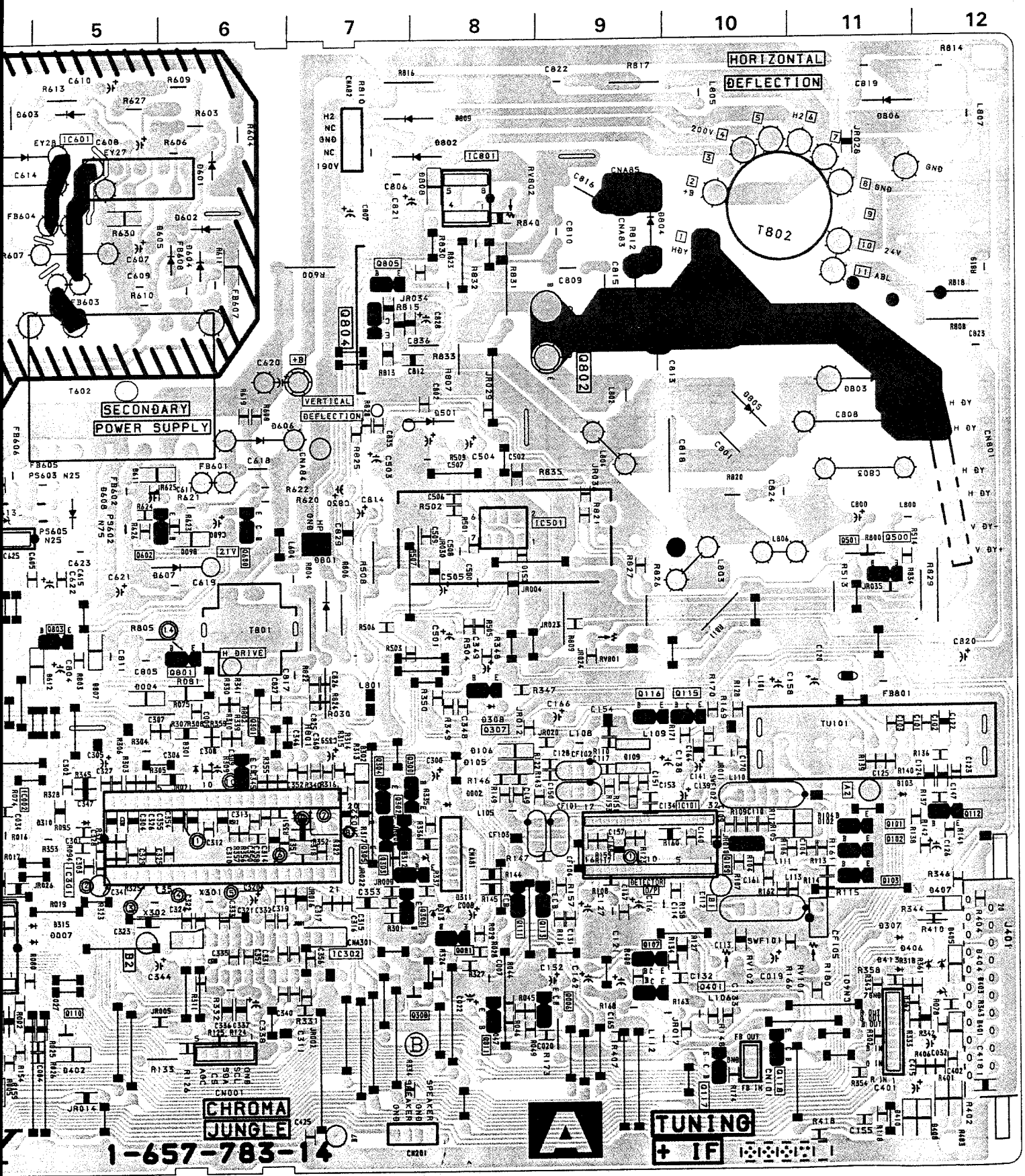
NOTE:
The circ
600 Vp-p
inspectio

— A BOARD —



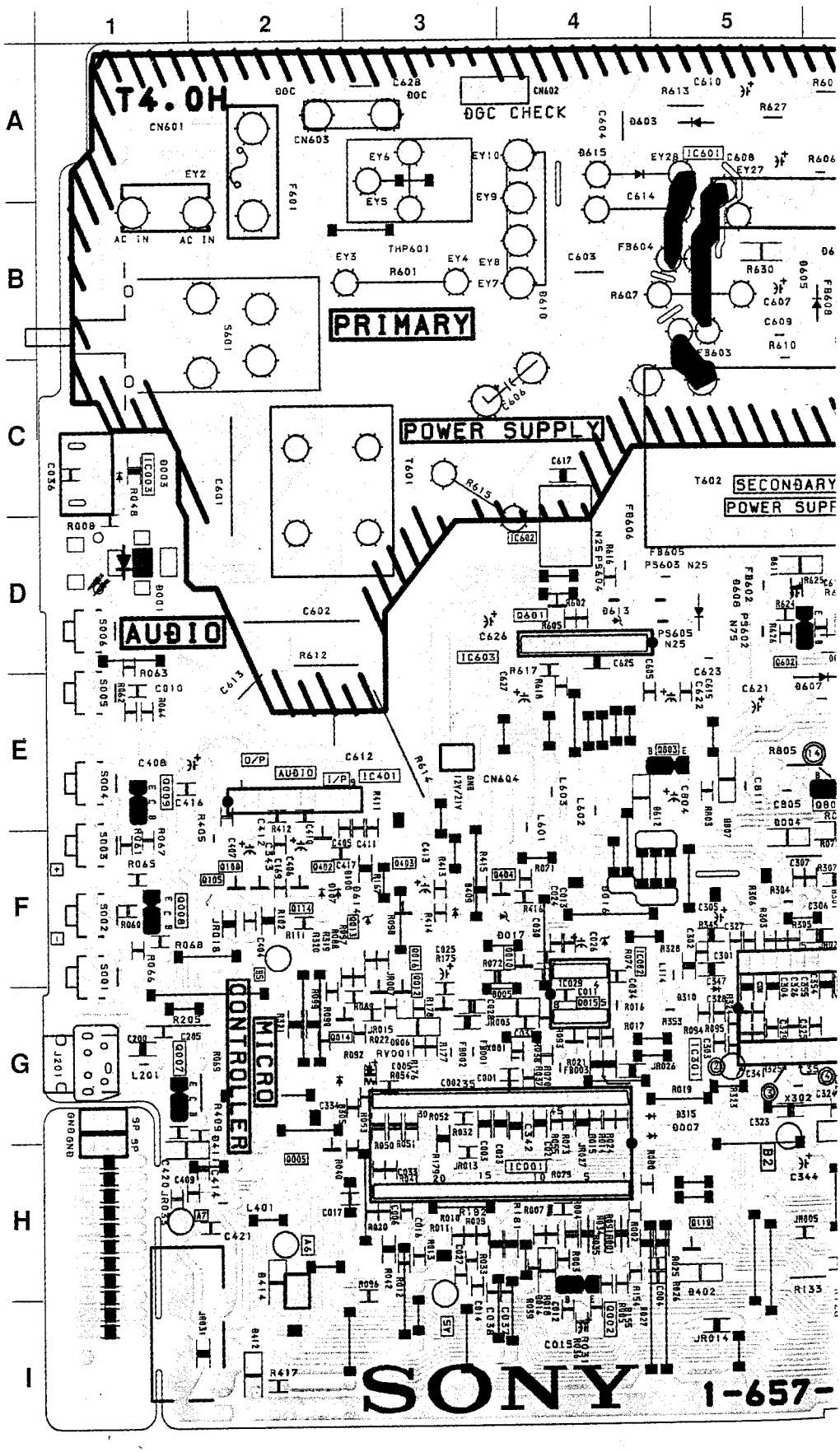
KV-21M1/T1

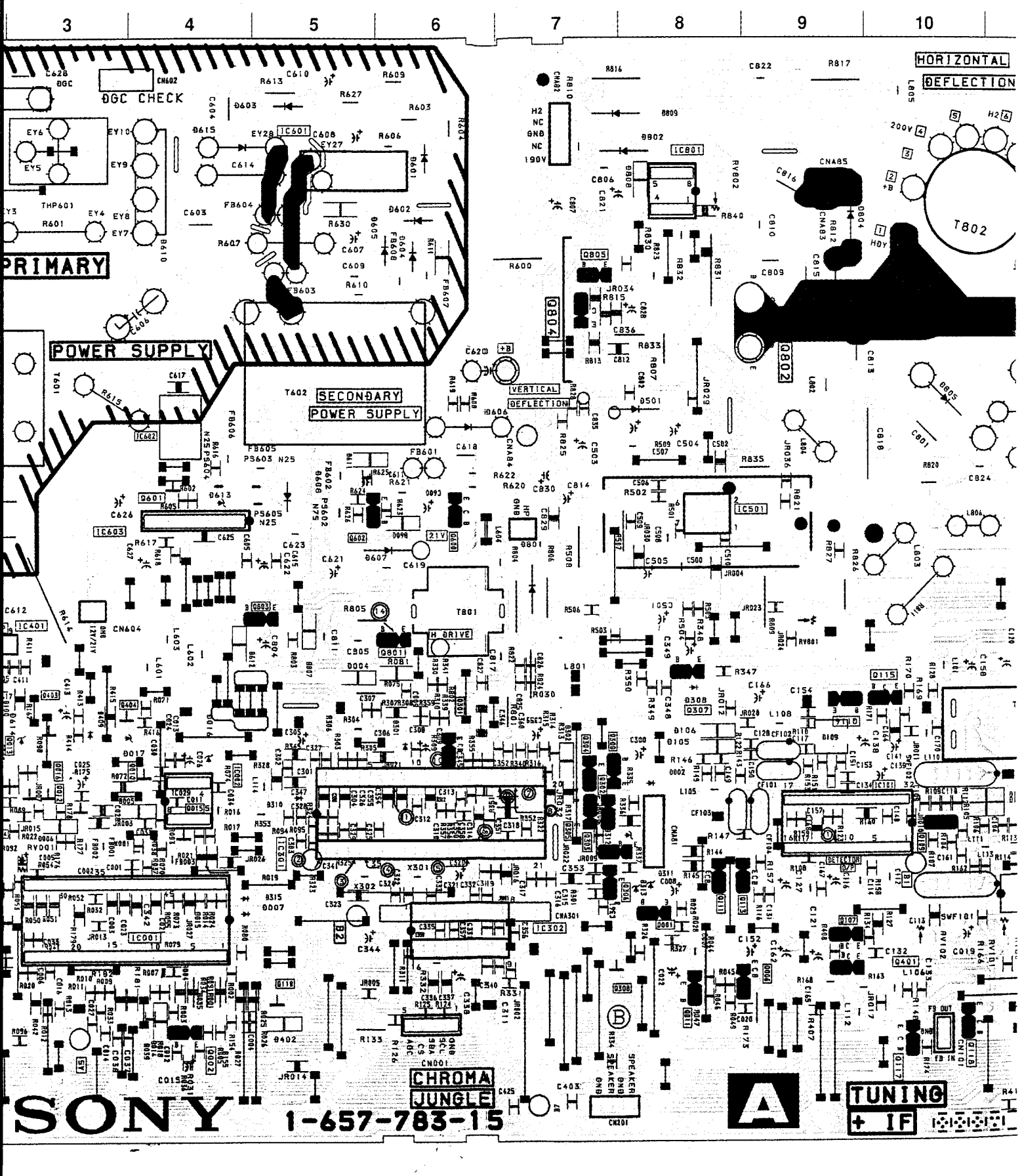
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

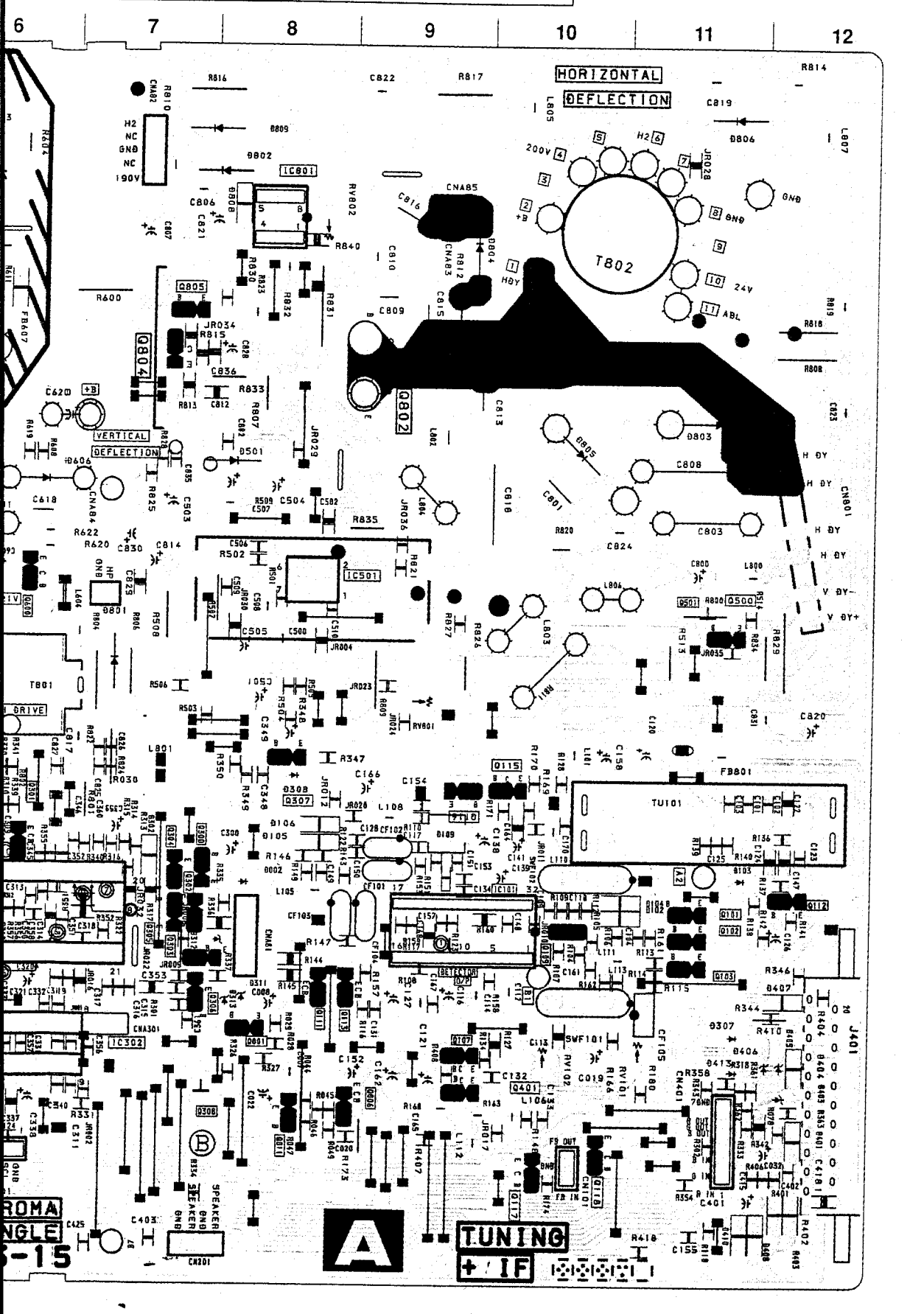


A SYSTEM CONTROL, HORIZONTAL OUTPUT, VERTICAL OUTPUT, CHROMINANCE, POWER, AUDIO

– A Board –




3
4
5
6
7
8
9
10
HORIZONTAL
DEFLECTION
DGC CHECK
PRIMARY
POWER SUPPLY
SECONDARY
POWER SUPPLY
VERTICAL
DEFLECTION
H DRIVE
CHROMA
JUNGLE
TUNING
+ IF
SONY
1-657-783-15


6
7
8
9
10
11
12
HORIZONTAL
DEFLECTION
VERTICAL
DEFLECTION
T802
Q802
IC801
IC501
IC302
TU101
FB801
J401
CNA02
CNA85
CNA83
CNA84
CNA01
CN201
CN801
CN461
CN101
H2
NC
GND
NC
190V
200V
+B
H DY
V DY-
V DY+
24V
ABL
FB OUT
FB IN
SPEAKER
GND
TUNING
+ / IF
A
DRIVE
ROMA
NGLE
3-15

SECTION 6
EXPLODED VIEWS

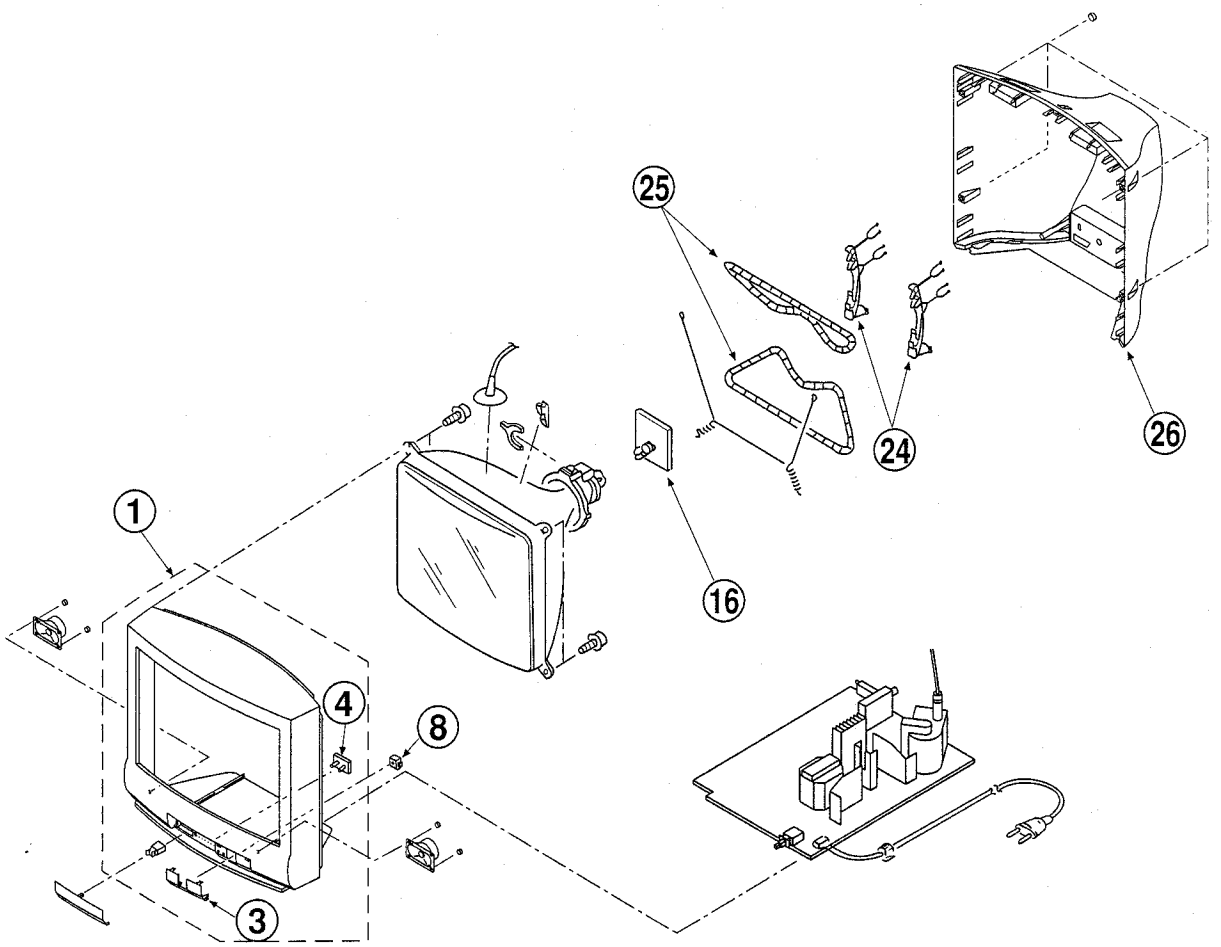
NOTE :

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

6-1. CHASSIS



REF NO	PART NO	DESCRIPTION	REMARK
1	X-4200-267-2	BEZNET ASSY	
3	4-203-432-11	WINDOW	
4	*4-203-431-11	GUIDE, LIGHT	
8	4-203-433-11	BUTTON, POWER	
16	*A-1638-068-A	C BOARD, COMPLETE	
24	*4-386-622-01	BAND, DGC	
25	1-406-612-11	COIL, DEGAUSSING	
26	4-203-437-02	COVER (REAR)	

SECTION 7

ELECTRICAL PARTS LIST

When indicating parts by reference number, please include the board name.

CAPACITORS
MF : mF, PF : mmF

COILS
MMH : mH, μH : mH

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS

- All resistors are in ohms
- F : nonflammable

REF NO	PART NO	DESCRIPTION	REMARK
		*A BOARD, COMPLETE	
		**********	
		< CAPACITOR >	
C016		NOT USED (KV-21M1K)	
C017		NOT USED (KV-21M1K)	
C034	1-130-489-00	FILM 0.033MF 20% 50V	
C106		NOT USED	
C107		NOT USED	
C205	1-163-017-00	CERAMIC CHIP 0.0047MF 5% 50V	
C361	1-164-161-11	CERAMIC CHIP 0.0022MF 5% 50V	
C403	1-163-031-11	CERAMIC CHIP 0.01MF 5% 50V	
C409		NOT USED	
C416	1-163-017-00	CERAMIC CHIP 0.0047MF 5% 50V	
		< FILTER >	
CF102	1-409-327-00	TRAP, CERAMIC (KV-21M1K)	
		< DIODE >	
D007	8-719-109-89	DIODE MTZJ-T-77-5.6B	
D016	8-719-109-89	DIODE MTZJ-T-77-5.6B	
D017	8-719-109-89	DIODE MTZJ-T-77-5.6B	
		< IC >	
IC001	8-759-452-21	IC SAA5290ZP/052 (KV-21T1K)	
	8-759-452-19	IC SAA5288ZP/024 (KV-21M1K)	
	8-759-452-20	IC SAA5290ZP/054 (KV-21T1R)	
IC002	8-759-251-04	IC ST24C02FB6	
IC003	8-742-014-10	IC SBX1981-51	
		< RESISTOR >	
JW101		NOT USED	
R122	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R143		NOT USED (KV-21T1K, KV-21M1K)	
R318	1-216-021-00	METAL GLAZE 68 5% 1/10W	
R358	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R401	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R808	1-260-114-11	CARBON 18K 1/2W	
R818	1-260-115-11	CARBON 22K 1/2W	

REF NO	PART NO	DESCRIPTION	REMARK
		*A-1638-068-A C BOARD, COMPLETE	
		**********	
		< DIODE >	
D722	8-719-991-33	DIODE ISS133T-77	
		< RESISTOR >	
R724	1-260-117-11	CARBON 33K 10% 1/2W	

****

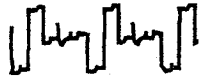
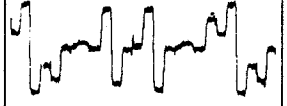
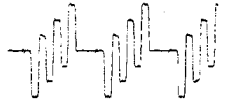
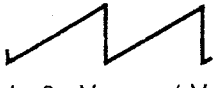
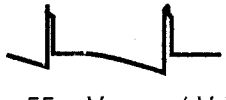
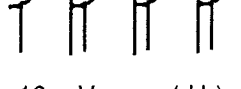
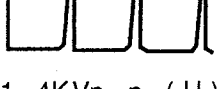
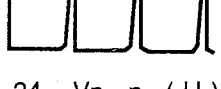
A BOARD * MARK

	21M1A/21T1A	21M1B/21T1B	21M1D/21T1D	21M1E/21T1E	21M1K/21T1K	21M1L/21T1L	21T1R	21M1U/21T1U
C016	0.47MF	0.47MF	0.47MF	0.47MF	0.47MF	0.47MF	—	0.47MF
C017	0.47MF	0.47MF	0.47MF	0.47MF	0.47MF	0.47MF	—	0.47MF
C112	—	0.1MF	—	—	—	—	—	—
C114	0.22MF	0.1MF	0.22MF	0.22MF	0.22MF	0.22MF	0.22MF	0.22MF
C116	—	2.2 50V	—	—	—	—	—	—
C120	1000MF 10V	1000MF 10V	1000MF 10V	470MF 10V	470MF 10V	470MF 10V	470MF 10V	470MF 10V
C131	—	—	—	—	0.001MF	—	0.001MF	—
C151	—	—	—	—	0.001MF	0.001MF	0.001MF	0.001MF
C153	—	—	—	—	15PF	15PF	15PF	15PF
C164	—	1MF	—	—	—	—	—	—
C322	—	—	—	—	18PF	—	18PF	—
C348	—	0.01MF	—	—	—	—	—	—
C349	—	22MF 50V	—	—	—	—	—	—
CF101	5.5/5.74MHz	5.5/6.5MHz	5.5/5.74MHz	5.5/5.74MHz	5.5/5.74MHz	6.0/6.5MHz	5.5/5.74MHz	6.0/6.5MHz
CF102	—	—	—	—	6.5MHz	—	6.5M,Hz	—
CF103	5.5MHz	5.5MHz	5.5MHz	5.5MHz	5.5MHz	6.0MHz	5.5MHz	6.0MHz
CF104	—	—	—	—	6.5MHz	—	6.5M,Hz	—
CF105	—	5.5MHz	—	—	—	—	—	5.5MHz
CN201	3P	3P	4P(M1) ,3P(T1)	3P	4P	3P	4P	3P
CN602	2P	2P	2P	2P	—	—	—	—
D105	—	—	—	—	1SS133T	—	1SS133T	—
D106	—	—	—	—	1SS133T	—	1SS133T	—
D109	—	—	—	—	1SV214	1SV214	1SV214	1SV214
D307	—	1SS133T	—	—	—	—	—	—
D308	—	1SS133T	—	—	—	—	—	—
IC001				Refer to "A board	* mark-2" table			
IC101	TDA9806	TDA9812	TDA9806	TDA9806	TDA9806	TDA9806	TDA9806	TDA9806
IC301	MC44007P	MC44002P	MC44002P	MC44007P	MC44002P	MC44007P	MC44002P	MC44007P
JR011	–	0 : CHIP	–	–	–	–	–	–
L108	8.2µH	8.2µH	8.2µH	8.2µH	4.7µH	8.2µH	4.7µH	8.2µH
L802	CHOKE COIL	CHOKE COIL	CHOKE COIL	CHOKE COIL	AIR-CORE COIL	AIR-CORE COIL	AIR-CORE COIL	AIR-CORE COIL
Q111	–	–	–	–	DTC144ES	–	DTC144ES	–
Q113	–	–	–	–	DTC144ES	–	DTC144ES	–
Q307	–	2SA933AS	–	–	–	–	–	–
Q308	–	DTC144EK	DTC144EK	–	DTC144EK	–	DTC144EK	–
R006	47K	33K	33K	47K	33K	47K	33K	47K
R122	150	150	150	150	100	150	100	150
R134	180	180	180	180	180	150	180	150
R143	0	0	0	0	0	0	2.2K	0
R144	–	–	–	–	2.2K	–	2.2K	–
R145	–	–	–	–	2.2K	–	2.2K	–
R147	–	–	–	–	560	–	560	–
R149	–	–	–	–	2.2K	–	2.2K	–
R151	–	–	–	–	100K	100K	100K	100K
R153	–	–	–	–	100K	100K	100K	100K
R157	–	1K	–	–	–	–	–	–
R158	390	180	390	390	390	390	390	390
R161	0 : CHIP	–	0 : CHIP	0 : CHIP	0 : CHIP	0 : CHIP	0 : CHIP	0 : CHIP
R180	–	1K	–	–	–	–	–	–
R326	–	82K	82K	–	82K	–	82K	–
R327	–	100K	100K	–	100K	–	100K	–
R347	–	470	–	–	–	–	–	–
R348	–	10K	–	–	–	–	–	–
R349	–	220K	–	–	–	–	–	–
R350	–	220	–	–	–	–	–	–
R351	–	8.2M	8.2M	–	8.2M	–	8.2M	–
R410	75	75	75	75	75	68	75	68
RV102	–	22K	–	–	–	–	–	–
SWF101	OPWG1963	OFWK3953	OPWG1963	OPWG1963	OFWK2950	OFWJ1952M	OFWK2950	OFWJ1952M
TU101	BT-AC401	TELE4-002B	TELE4-002B	BT-AC401	BT-AC401	UV1315	TELE4-002B	BT-AU601
X301	–	–	–	–	14.32MHz	–	14.32MHz	–

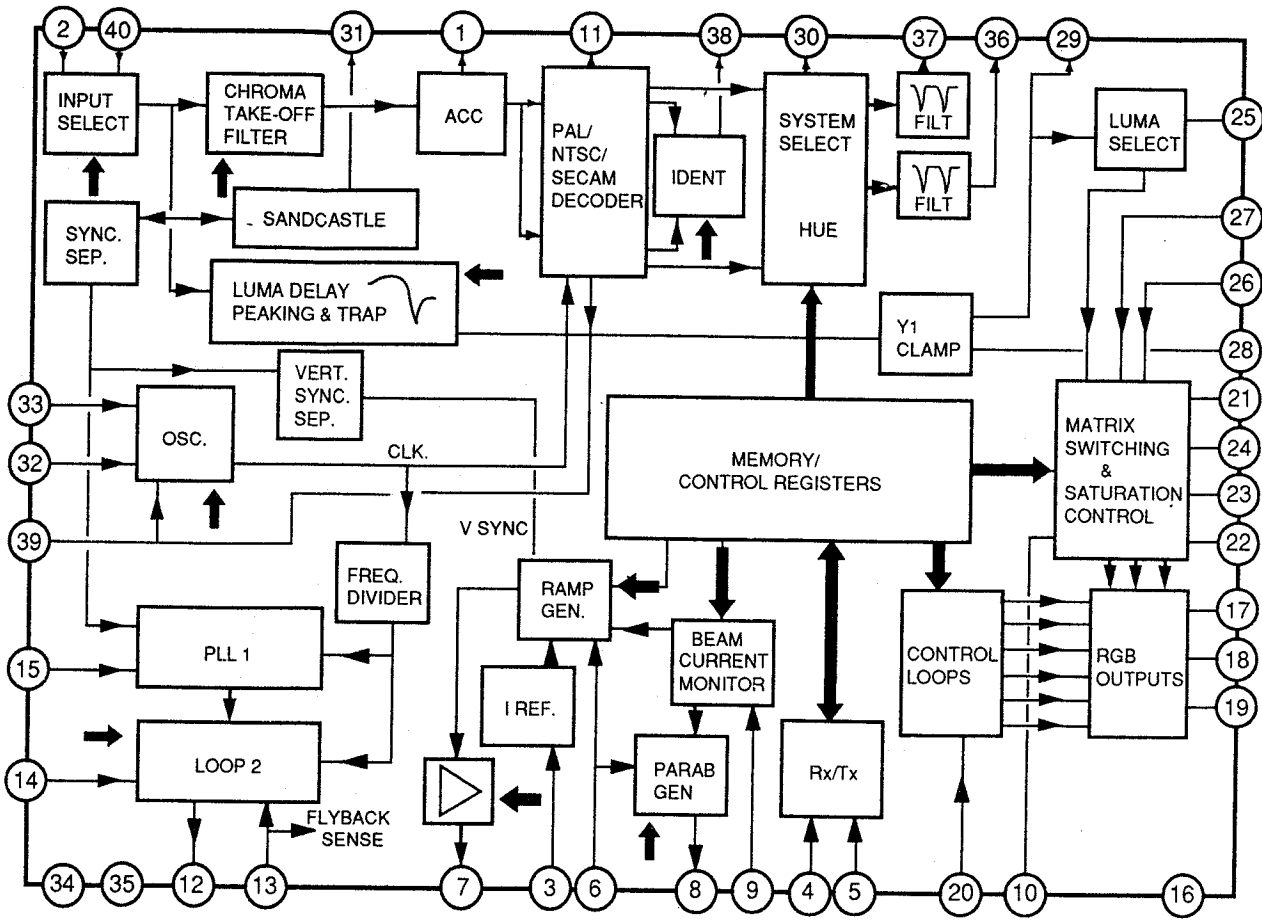
A BOARD * MARK-2 **(IC001)**

KV-21M1A/21M1B/21M1D/21M1E/21M1K/21M1L/21M1U	SAA5288ZP/014
KV-21T1A/21T1B/21T1D/21T1E/21T1K/21T1L/21T1R/21T1U	SAA5290ZP/014

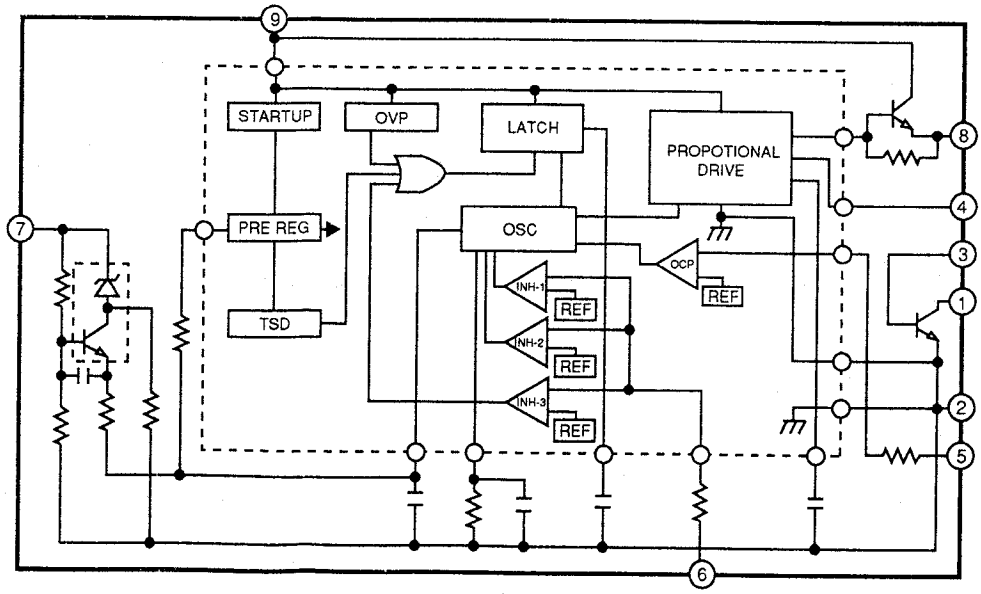
WAVEFORMS A BOARD

① 2.0 Vp-p (H)	② 1.0 Vp-p (H)	③  1.0 Vp-p (H)	④ PAL  1.0 Vp-p (H)	④ SECAM/NTSC 1.2 Vp-p (H)
⑤ PAL 1.0 Vp-p (H)	⑤ SECAM 0.5 Vp-p (H)	⑤ NTSC 1.1 Vp-p (H)	⑥ PAL 1.4 Vp-p (H)	⑥ SECAM  0.7 Vp-p (H)
⑥ NTSC 1.5 Vp-p (H)	⑦ 1.0 Vp-p (H)	⑧ 1.4 Vp-p (H)	⑨ 1.5 Vp-p (H)	⑩ 0.8 Vp-p (H)
⑪  1.8 Vp-p (V)	⑫  55 Vp-p (V)	⑬ 7.3 Vp-p (V)	⑭ 220 Vp-p (H)	⑮  10 Vp-p (H)
⑯  1.4KVp-p (H)	⑰ 51 Vp-p (H)	⑱  24 Vp-p (H)		

A BOARD IC301 MC44002P/MC44007P



A BOARD IC601 STRS5706



S1

S2

S3

S4

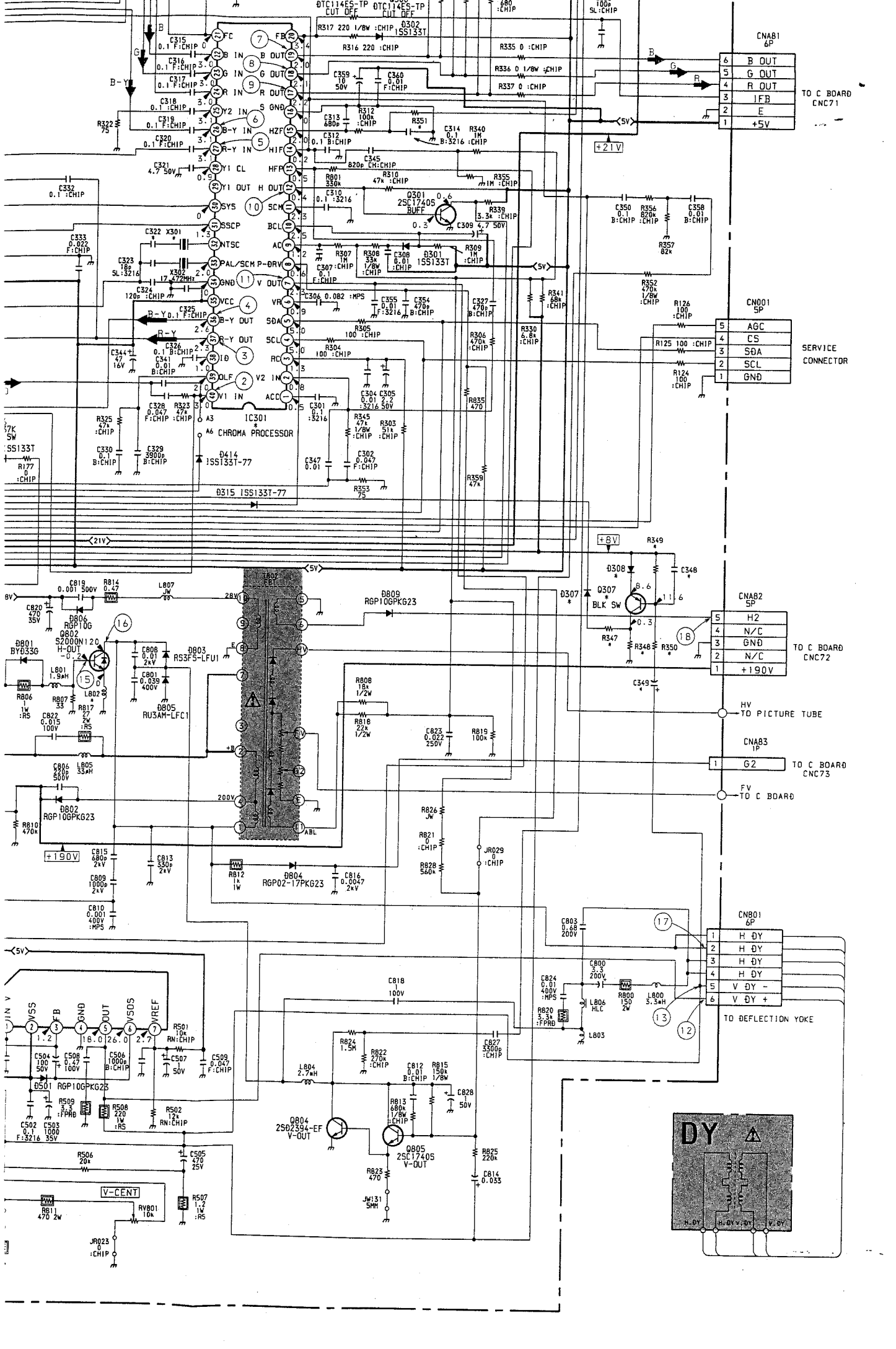
S5

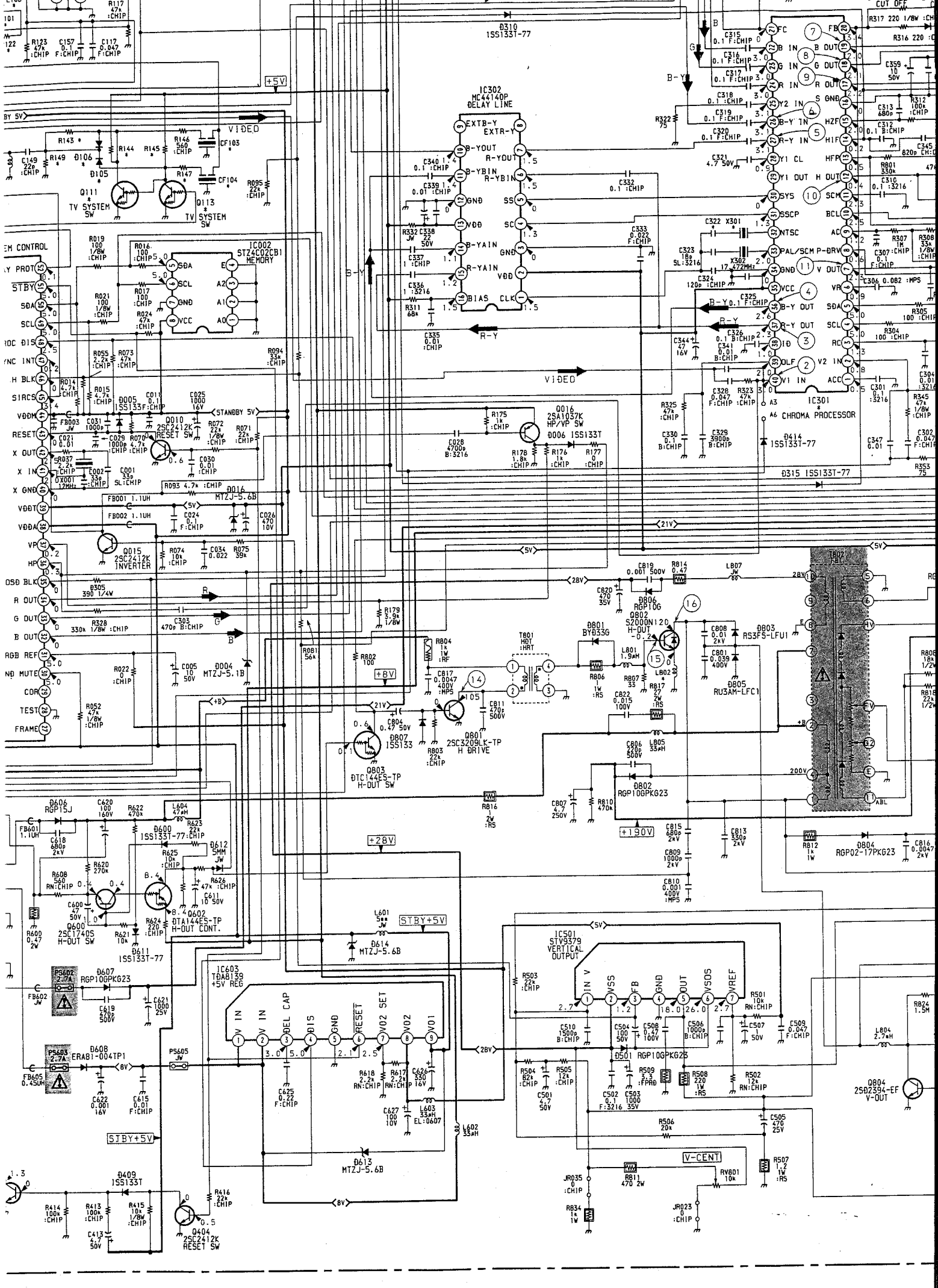
S6

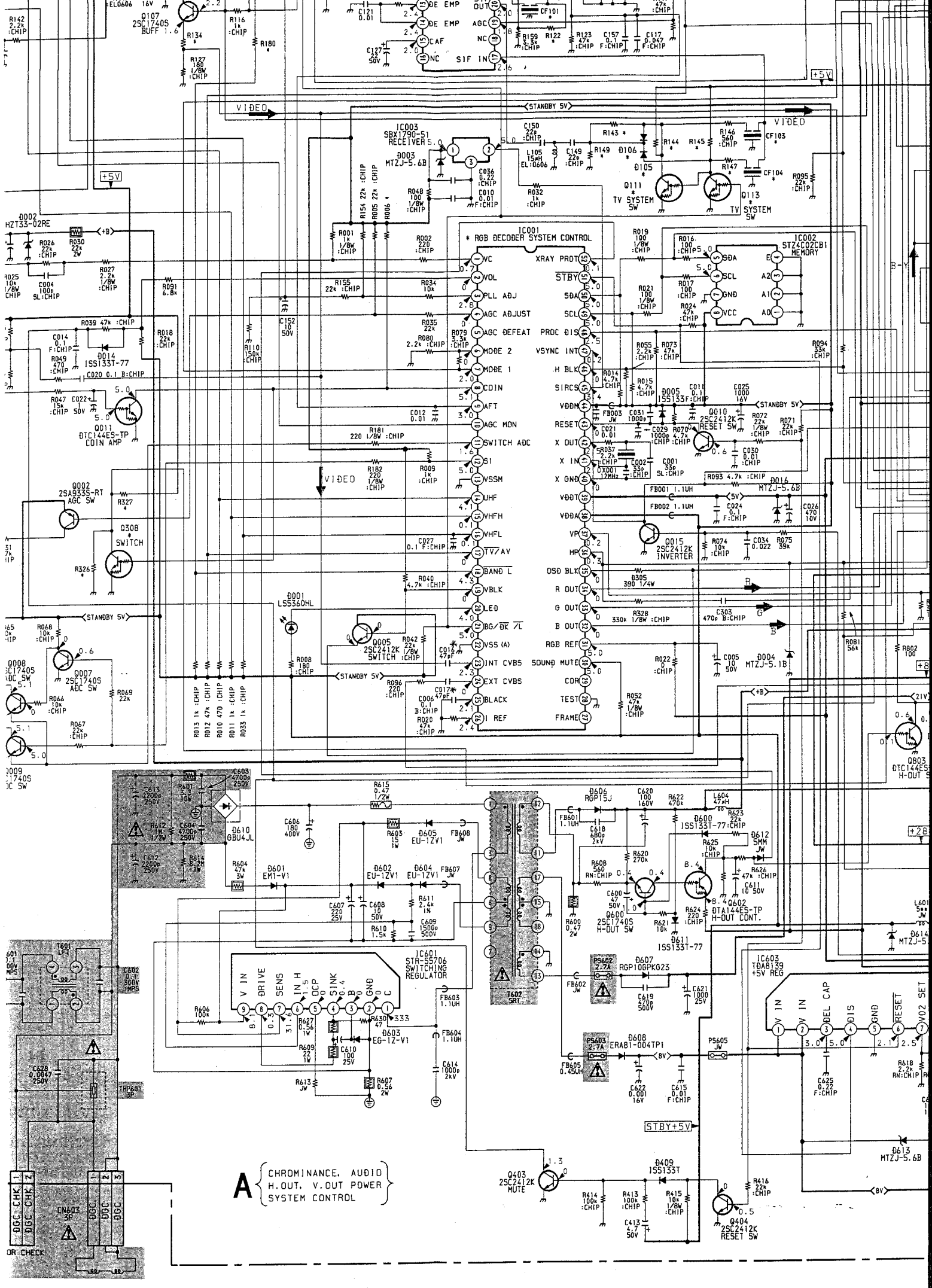
S7

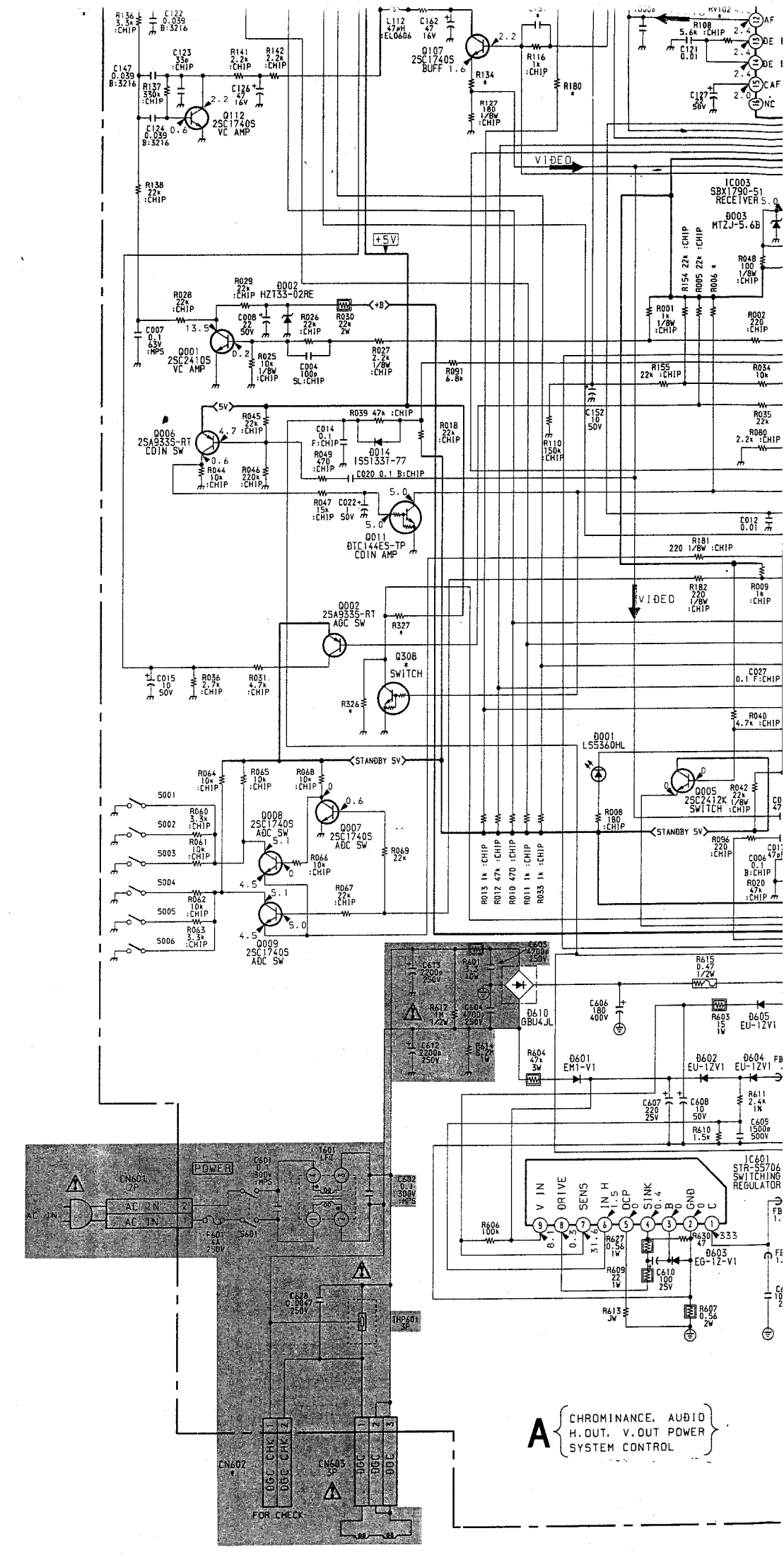
S8

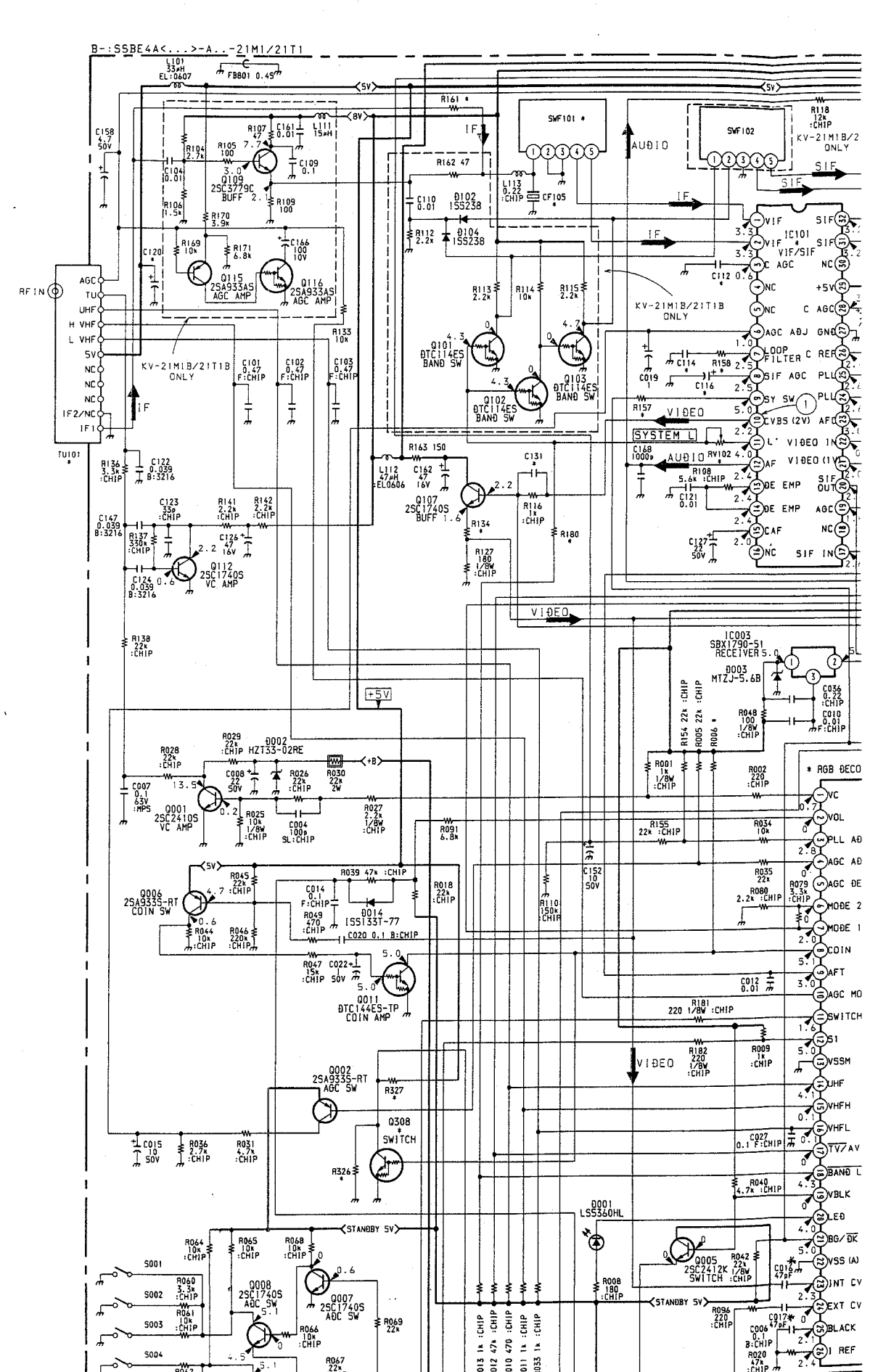
A CHROMINANCE, AUDIO H.OUT, V.OUT POWER SYSTEM CONTROL

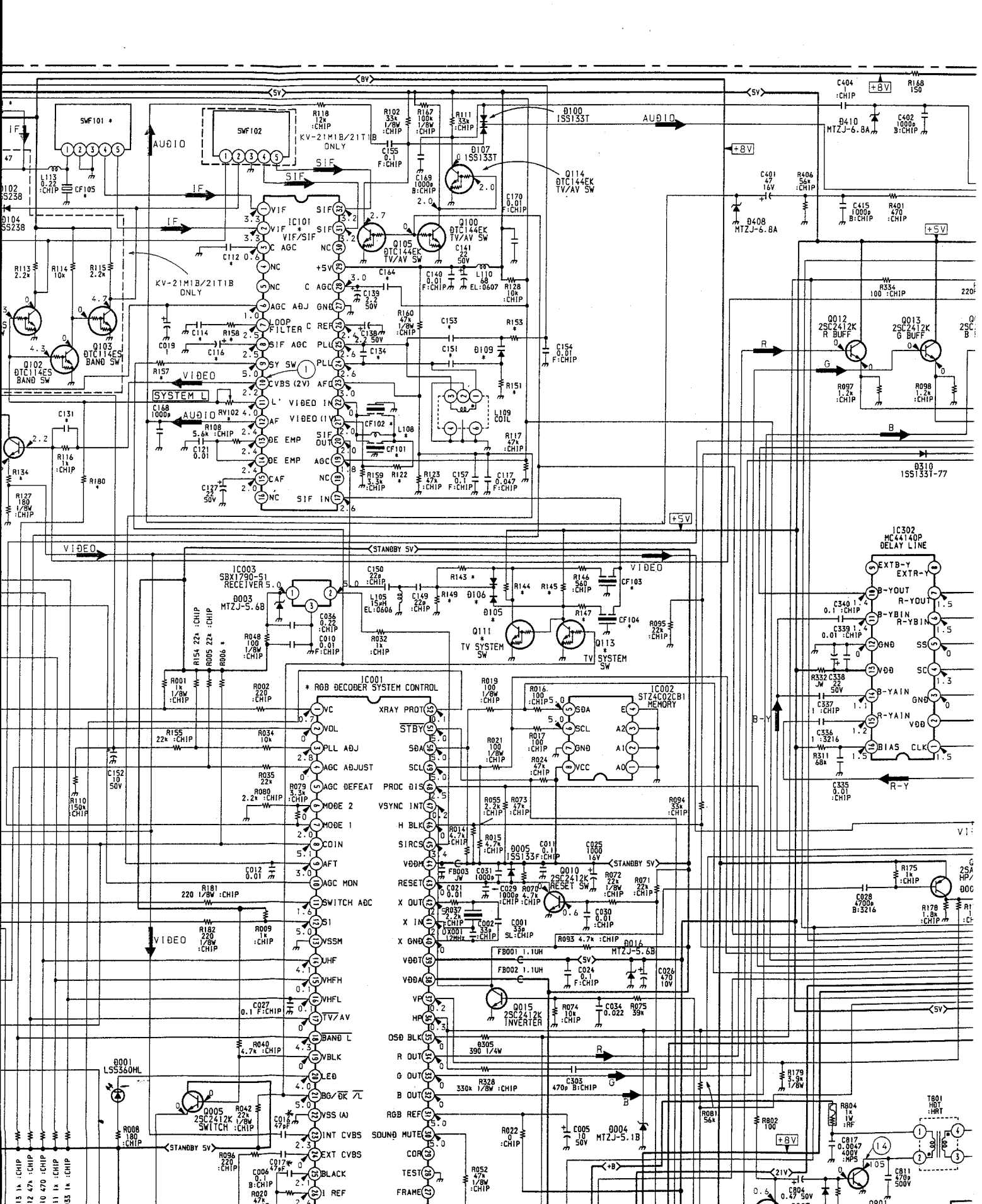

IC301
A6 CHROMA PROCESSOR
CNA81 6P
B OUT
G OUT
R OUT
IFB
E
+5V
TO C BOARD CNC71
CN001 5P
AGC
CS
SDA
SCL
GND
SERVICE CONNECTOR
CNA82 5P
H2
N/C
GND
N/C
+190V
TO C BOARD CNC72
HV
TO PICTURE TUBE
CNA83 1P
G2
TO C BOARD CNC73
FV
TO C BOARD
CN801 6P
H ΘY
H ΘY
H ΘY
H ΘY
V ΘY -
V ΘY +
TO DEFLECTION YOKE
DY
H-ΘY
V-ΘY
V-ΘY
+5V
+21V
+8V
+190V
V-CENT
Q801 S2000N120 H-OUT
Q802 RGP10GPKG23
Q804 2SD2394-EF V-OUT
Q805 2SC1740S V-OUT
Q301 2SC1740S BUFF
D809 RGP10GPKG23
D804 RGP02-17PKG23
D803 RS3FS-LFU1
D805 RU3AM-LFC1
D806 RGP10G
D801 BYD33G
D802 RGP10GPKG23
D414 1SS133T-77
D315 1SS133T-77
D302 1SS133T
D307 BLK SW
D308
D501 RGP10GPKG23

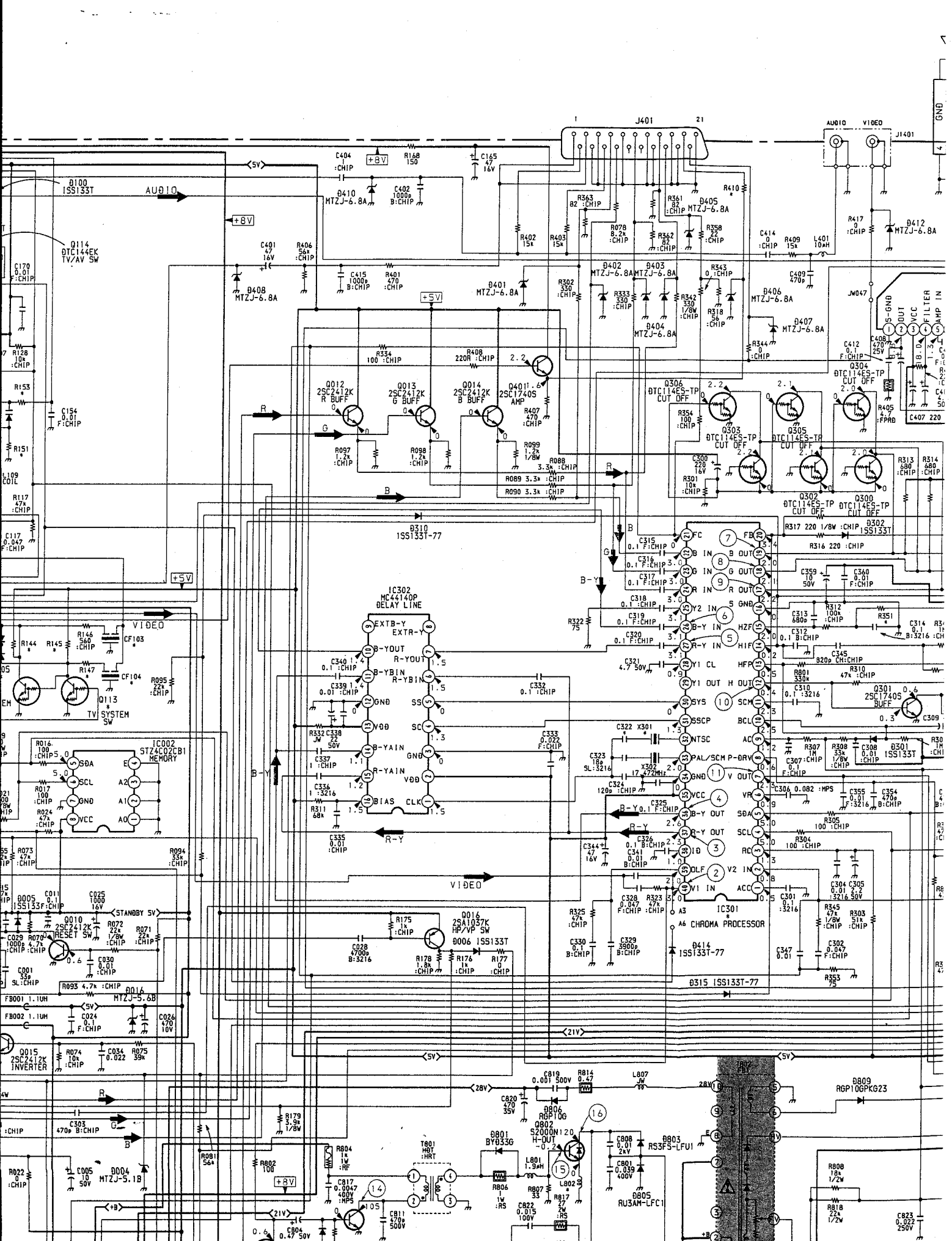

IC302
MC44140P
DELAY LINE
IC002
STZ4C02CB1
MEMORY
IC301
CHROMA PROCESSOR
IC501
STV9379
VERTICAL
OUTPUT
IC603
TDA8139
+5V REG
Q010
2SC2412K
RESET SW
Q015
2SC2412K
INVERTER
Q016
2SA1037K
HP/VP SW
Q600
2SC1740S
H-OUT SW
Q602
DTA144ES-TP
H-OUT CONT.
Q801
2SC3209LK-TP
H DRIVE
Q802
S2000N120
H-OUT
Q803
DTC144ES-TP
H-OUT SW
Q804
2SD2394-EF
V-OUT
Q404
2SC2412K
RESET SW
T801
HOT
T802
FBT
VIDEO
R-Y
B-Y
+5V
+8V
+21V
+28V
+190V
STANDBY 5V
STBY+5V
V-CENT

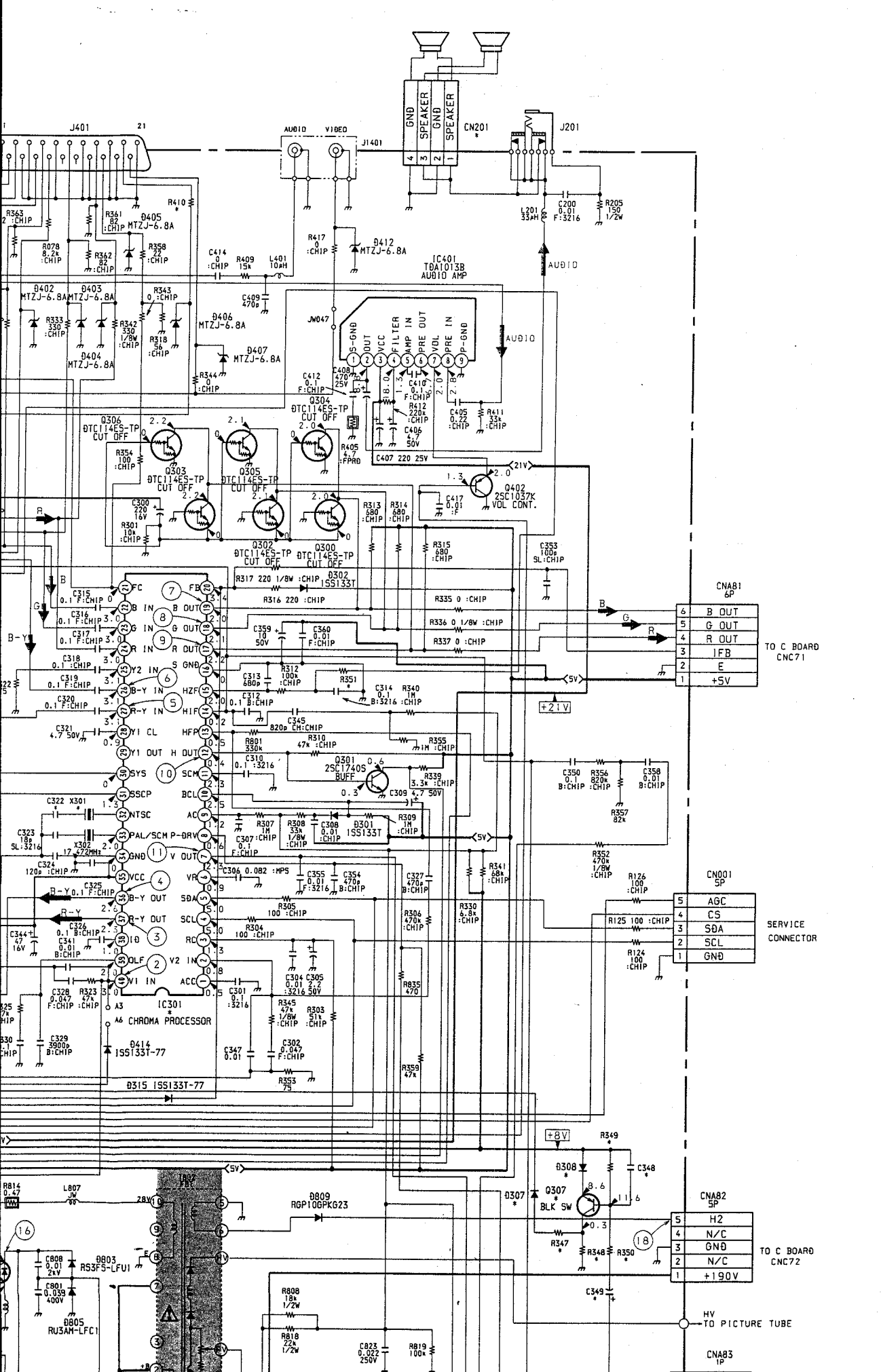

IC001
* RGB DECODER SYSTEM CONTROL
IC002
ST24C02CB1
MEMORY
IC003
SBX1790-51
RECEIVER
IC601
STR-55706
SWITCHING
REGULATOR
IC603
TDA8139
+5V REG
VIDEO
STANDBY 5V
+5V
+B
STBY+5V
Q001
LS5360HL
Q002
2SA933S-RT
AGC SW
Q003
2SC2412K
SWITCH
Q007
2SC1740S
ADC SW
Q008
SWITCH
Q009
2SC1740S
ADC SW
Q010
2SC2412K
RESET SW
Q011
DTC144ES-TP
COIN AMP
Q015
2SC2412K
INVERTER
Q107
2SC1740S
BUFF
Q403
2SC2412K
MUTE
Q404
2SC2412K
RESET SW
Q600
2SC1740S
H-OUT SW
Q602
DTA144ES-TP
H-OUT CONT.
Q611
1SS133T-77
Q613
DTC144ES
H-OUT S
D001
LS5360HL
D002
HZT33-02RE
D003
MTZJ-5.6B
D004
MTZJ-5.1B
D005
1SS133F
D006
MTZJ-5.6B
D014
1SS133T-77
D105
D106
D409
1SS133T
D600
1SS133T-77
D601
EM1-V1
D602
EU-1ZV1
D603
EG-1Z-V1
D604
EU-1ZV1
D605
EU-1ZV1
D606
RGP15J
D607
RGP10GPKG23
D608
ERA81-004TP1
D610
GBU4JL
D611
1SS133T-77
D612
5MM
D613
MTZJ-5.6B
D614
MTZJ-5.
T601
T602
SRT
T603
THP601
5P
CN603
3P
PS602
2.7A
PS603
2.7A
PS605
JW
FB601
1.1UH
FB602
JW
FB603
1.1UH
FB604
1.1UH
FB605
0.45UH
FB607
JW
FB608
JW
CF101
CF103
CF104
L105
15mH
EL:0606
L404
47mH
A
CHROMINANCE, AUDIO
H.OUT, V.OUT POWER
SYSTEM CONTROL
OR CHECK


VIDEO
+5V
+B
5V
STANDBY 5V
IC003
SBX1790-51
RECEIVER
Q001
2SC2410S
VC AMP
Q002
2SA933S-RT
AGC SW
Q003
SWITCH
Q005
2SC2412K
SWITCH
Q006
2SA933S-RT
COIN SW
Q007
2SC1740S
ADC SW
Q008
2SC1740S
ADC SW
Q009
2SC1740S
ADC SW
Q011
DTC144ES-TP
COIN AMP
Q107
2SC1740S
BUFF
Q112
2SC1740S
VC AMP
D001
LS5360HL
D002
HZT33-02RE
D003
MTZJ-5.6B
D601
EM1-V1
D602
EU-1ZV1
D603
EG-1Z-V1
D604
EU-1ZV1
D605
EU-1ZV1
D610
GBU4JL
IC601
STR-S5706
SWITCHING
REGULATOR
V IN
DRIVE
SENS
IN H
OCP
SINK
B
GND
C
POWER
AC IN
CN601
2P
CN602
CN603
3P
FOR CHECK
A
CHROMINANCE, AUDIO
H.OUT, V.OUT POWER
SYSTEM CONTROL

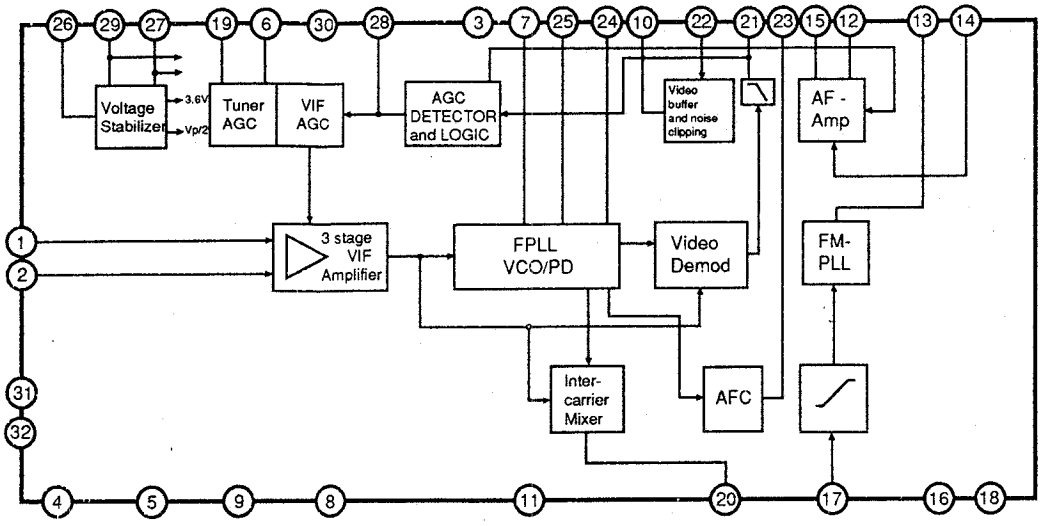

B-:SSBE4A<...>-A..-21M1/21T1
KV-21M1B/21T1B ONLY
IC101
VIF/SIF
IC003
SBX1790-51
RECEIVER
Q101 DTC114ES BAND SW
Q102 DTC114ES BAND SW
Q103 DTC114ES BAND SW
Q104 1SS238
Q105 7.7
Q106 1.5k
Q107 2SC1740S BUFF 1.6
Q108 5.6k :CHIP
Q109 2SC3779C BUFF 2.
Q110 150k :CHIP
Q111 15uH
Q112 2SC1740S VC AMP
Q115 2SA933AS AGC AMP
Q116 2SA933AS AGC AMP
Q001 2SC2410S VC AMP
Q002 2SA933S-RT AGC SW
Q003 MTZJ-5.6B
Q004 100p SL:CHIP
Q005 2SC2412K SWITCH
Q006 2SA933S-RT COIN SW
Q007 2SC1740S ADC SW
Q008 2SC1740S ADC SW
Q011 DTC144ES-TP COIN AMP
Q014 1SS133T-77
Q308 SWITCH
D001 LS5360HL
SW101
SW102
RF IN
TU101
AGC
TU
UHF
H VHF
L VHF
5V
NC
IF2/NC
IF1
IF
VIDEO
SYSTEM L
AUDIO
+5V
+B
STANDBY 5V
SIF
VIF
C 0.6
C 2.2
C 0.1
C 0.01
C 0.22 :CHIP
C 0.039 B:3216
C 0.47 F:CHIP
C 10 50V
C 47 16V
C 100 10V
R 2.2k
R 10k
R 100
R 1k
R 1k 1/8W :CHIP
R 2.2k :CHIP
R 10k :CHIP
R 22k :CHIP
R 47k :CHIP
R 100k :CHIP
R 150k :CHIP
R 220 :CHIP
R 4.7k :CHIP
R 10k 1/8W :CHIP
R 220 1/8W :CHIP
R 5.6k :CHIP
R 12k :CHIP
R 180 :CHIP
R 470 :CHIP
R 680 :CHIP
R 6.8k
R 3.3k :CHIP
R 33k :CHIP
R 330k :CHIP
R 680 2W
R 1k 1/8W :CHIP
R 2.7k :CHIP
R 3.9k
R 4.7k :CHIP
R 6.8k
R 15k :CHIP
R 47k :CHIP
R 47 :CHIP
R 100 1/8W :CHIP
R 220k :CHIP
R 10k 1/8W :CHIP
R 2.2k 1/8W :CHIP
R 22k 1/8W :CHIP
R 100 1/8W :CHIP
R 10k 1/8W :CHIP
R 10k :CHIP
R 22k :CHIP
R 470 :CHIP
R 1k :CHIP
R 47k :CHIP
R 10k :CHIP
R 2.2k :CHIP
R 10k :CHIP
R 2.2k :CHIP
R 1k :CHIP
R 2.2


IC101
VIF/SIF
IC001
* RGB DECODER SYSTEM CONTROL
IC002
STZ4C02CB1
MEMORY
IC003
SBX1790-51
RECEIVER
IC302
MC44140P
DELAY LINE
Q015
2SC2412K
INVERTER
Q005
2SC2412K
SWITCH
Q012
2SC2412K
R BUFF
Q013
2SC2412K
G BUFF
Q010
2SC2412K
RESET SW
Q100
DTC144EK
TV/AV SW
Q105
DTC144EK
TV/AV SW
Q107
1SS133T
Q114
DTC144EK
TV/AV SW
Q102
DTC114ES
BAND SW
Q103
DTC114ES
BAND SW
Q111
TV SYSTEM SW
Q113
TV SYSTEM SW
D100
1SS133T
D107
1SS133T
D310
1SS133T-77
D410
MTZJ-6.8A
D408
MTZJ-6.8A
D003
MTZJ-5.6B
D004
MTZJ-5.1B
D016
MTZJ-5.6B
D001
LS5360HL
SWF101 *
SWF102
KV-21M1B/21T1B ONLY
SYSTEM L
VIDEO
AUDIO
SIF
IF
5V
8V
+8V
+5V
+B
21V
STANDBY 5V
R
G
B
R-Y
B-Y

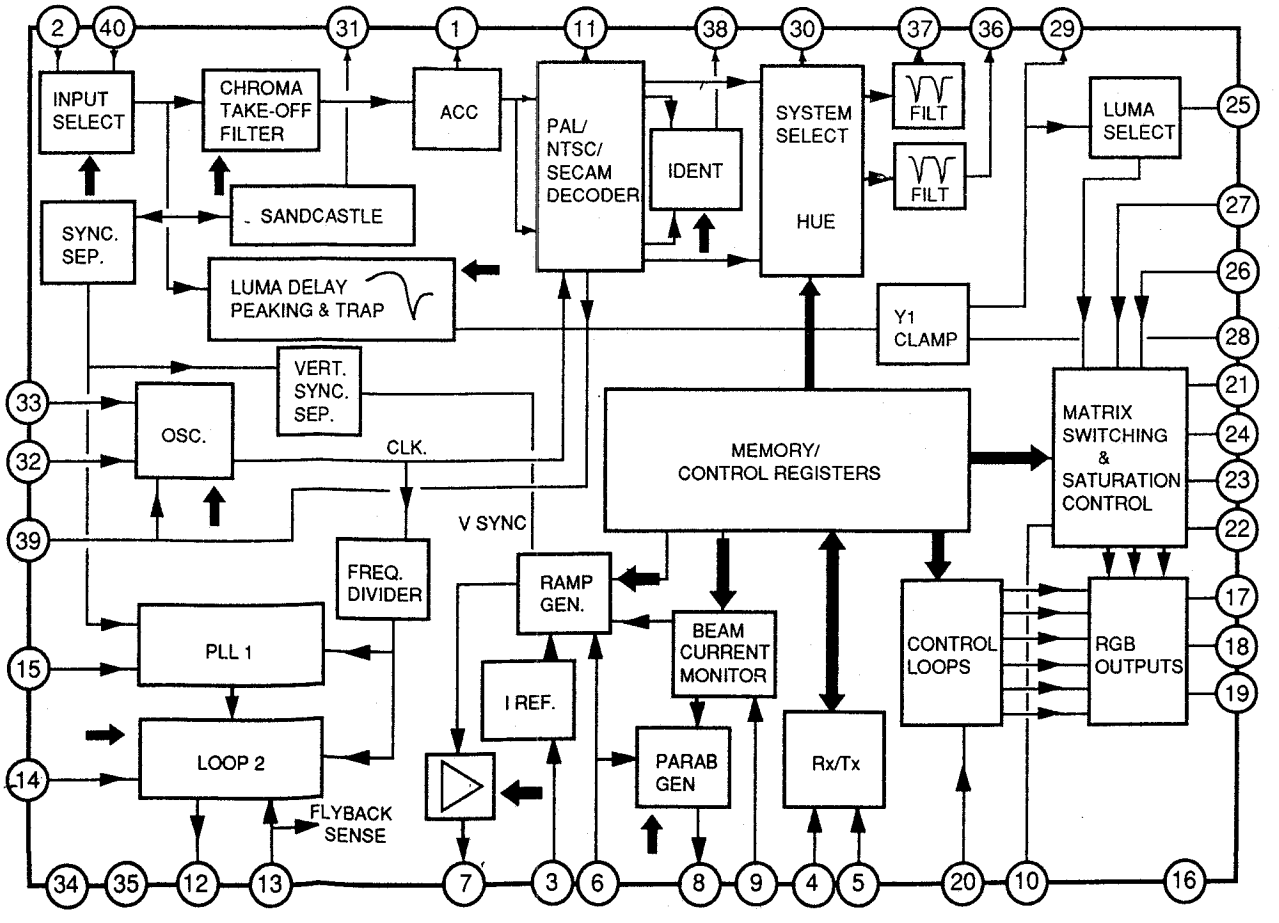

J401
AUDIO
VIDEO
+5V
+8V
+21V
+28V
+B
STANDBY 5V
IC302
MC44140P
DELAY LINE
IC002
STZ4C02CB1
MEMORY
IC301
CHROMA PROCESSOR
Q114
DTC144EK
TV/AV SW
Q113
TV SYSTEM SW
Q012
2SC2412K
R BUFF
Q013
2SC2412K
G BUFF
Q014
2SC2412K
B BUFF
Q401
2SC1740S
AMP
Q303
DTC114ES-TP
CUT OFF
Q305
DTC114ES-TP
CUT OFF
Q306
DTC114ES-TP
CUT OFF
Q304
DTC114ES-TP
CUT OFF
Q302
DTC114ES-TP
CUT OFF
Q300
DTC114ES-TP
CUT OFF
Q301
2SC1740S
BUFF
Q010
2SC2412K
RESET SW
Q015
2SC2412K
INVERTER
Q016
2SA1037K
HP/VP SW
Q801
BY033G
Q802
S2000N120
H-OUT
D310
1SS133T-77
D315
1SS133T-77
D414
1SS133T-77
D809
RGP10GPKG23
D806
RGP10G
D803
RS3FS-LFUI
D805
RU3AM-LFC1
T801
HOT
:HRT
L801
1.9mH
L802
L807
JW047
S-GND
OUT
VCC
FILTER
AMP IN


J401
AUDIO
VIDEO
J1401
GND
SPEAKER
GND
SPEAKER
CN201
J201
AUDIO
L201 33uH
C200 0.01 F:3216
R205 150 1/2W
R410
D405 MTZJ-6.8A
R361 82 :CHIP
R363 2 :CHIP
R078 8.2k :CHIP
R362 82 :CHIP
R358 22 :CHIP
C414 0 :CHIP
R409 15k
L401 10uH
R417 0 :CHIP
D412 MTZJ-6.8A
IC401 TDA1013B AUDIO AMP
D402 MTZJ-6.8A
D403 MTZJ-6.8A
D404 MTZJ-6.8A
R333 330 :CHIP
R342 330 1/8W :CHIP
R343 0 :CHIP
R318 56 :CHIP
C409 470p
D406 MTZJ-6.8A
D407 MTZJ-6.8A
R344 0 :CHIP
JW047
S-GND
OUT
VCC
FILTER
AMP IN
PRE OUT
VOL
PRE IN
P-GND
AUDIO
C408 470 25V
C412 0.1 F:CHIP
C410 0.1 F:CHIP
R412 220k :CHIP
C405 0.22 :CHIP
R411 33k :CHIP
C406 4.7 50V
C407 220 25V
Q304 DTC114ES-TP CUT OFF
Q306 DTC114ES-TP CUT OFF
Q303 DTC114ES-TP CUT OFF
Q305 DTC114ES-TP CUT OFF
Q302 DTC114ES-TP CUT OFF
Q300 DTC114ES-TP CUT OFF
R354 100 :CHIP
R405 4.7 :FPRD
C300 220 16V
R301 10k :CHIP
21V
Q402 2SC1037K VOL CONT.
C417 0.01 :F
R313 680 :CHIP
R314 680 :CHIP
R315 680 :CHIP
C353 100p 5L:CHIP
R317 220 1/8W :CHIP
D302 1SS133T
R316 220 :CHIP
R335 0 :CHIP
R336 0 1/8W :CHIP
R337 0 :CHIP
CNA81 6P
6 B OUT
5 G OUT
4 R OUT
3 IFB
2 E
1 +5V
TO C BOARD CNC71
C315 0.1 F:CHIP
C316 0.1 F:CHIP
C317 0.1 F:CHIP
C318 0.1 :CHIP
C319 0.1 F:CHIP
C320 0.1 F:CHIP
C321 4.7 50V
C359 10 50V
C360 0.01 F:CHIP
C313 680p :CHIP
R312 100k :CHIP
R351
C314 0.1 B:3216
R340 1M :CHIP
C312 0.1 B:CHIP
C345 820p CH:CHIP
R801 330k
R310 47k :CHIP
R355 1M :CHIP
C310 0.1 :3216
Q301 2SC1740S BUFF
R339 3.3k :CHIP
C309 4.7 50V
C350 0.1 B:CHIP
R356 820k :CHIP
C358 0.01 B:CHIP
R357 82k
R352 470k 1/8W :CHIP
R307 1M :CHIP
R308 33k 1/8W :CHIP
C308 0.01 :CHIP
D301 1SS133T
R309 1M :CHIP
C307 0.1 F:CHIP
C306 0.082 :MPS
C355 0.01 F:3216
C354 470p B:CHIP
C327 470p B:CHIP
R341 68k :CHIP
R330 6.8k :CHIP
R306 470 :CHIP
R305 100 :CHIP
R304 100 :CHIP
R126 100 :CHIP
R125 100 :CHIP
R124 100 :CHIP
CN001 5P
5 AGC
4 CS
3 SDA
2 SCL
1 GND
SERVICE CONNECTOR
C322 X301
C323 18p 5L:3216
X302 472MHz
C324 120p :CHIP
C325 0.1 F:CHIP
C326 0.1 B:CHIP
C344 47 16V
C361 0.01 B:CHIP
C328 0.047 F:CHIP
R323 47k :CHIP
IC301
A6 CHROMA PROCESSOR
C329 3900p B:CHIP
D414 1SS133T-77
D315 1SS133T-77
C347 0.01
R345 47k 1/8W :CHIP
R303 51k :CHIP
C302 0.047 F:CHIP
R353 75
R359 47k
R835 470
C304 0.01 :3216
C305 2.2 50V
C301 0.1 :3216
+8V
R349
D308
C348
D307
Q307 BLK SW
R347
R348
R350
CNA82 5P
5 H2
4 N/C
3 GND
2 N/C
1 +190V
TO C BOARD CNC72
C349
HV TO PICTURE TUBE
CNA83 1P
5V
+21V
L807 FB
D809 RGP10GPKG23
D803 RS3F5-LFU1
D805 RU3AM-LFC1
C808 0.01 2kV
C801 0.039 400V
R814 0.47
R808 18k 1/2W
R818 22k 1/2W
C823 0.022 250V
R819 100k

A BOARD IC101 TDA9806/TDA9812

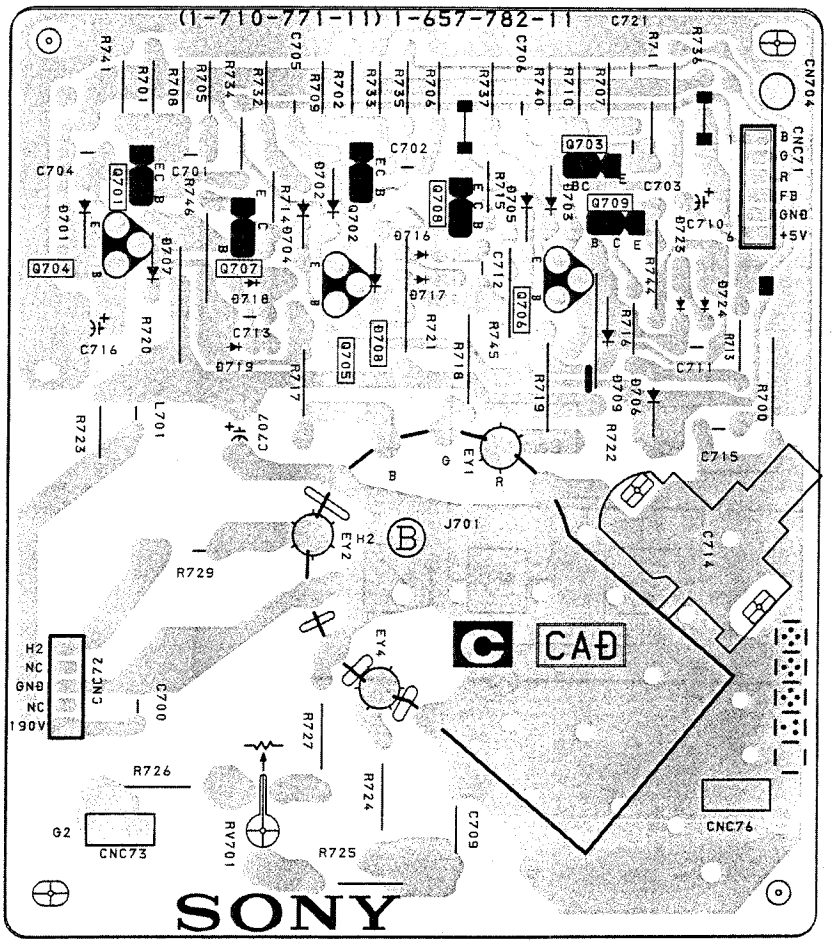


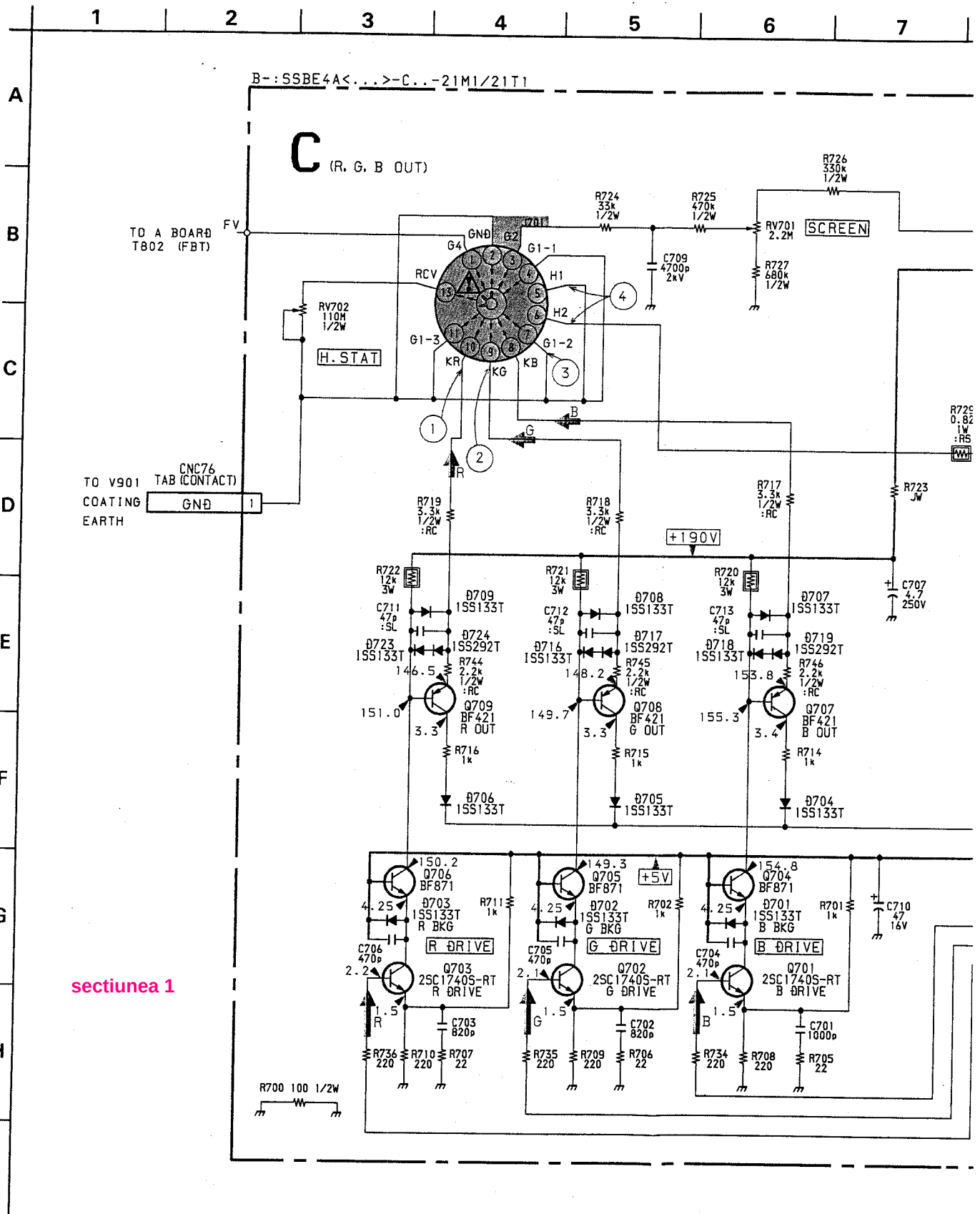
A BOARD IC301 MC44002P/MC44007P

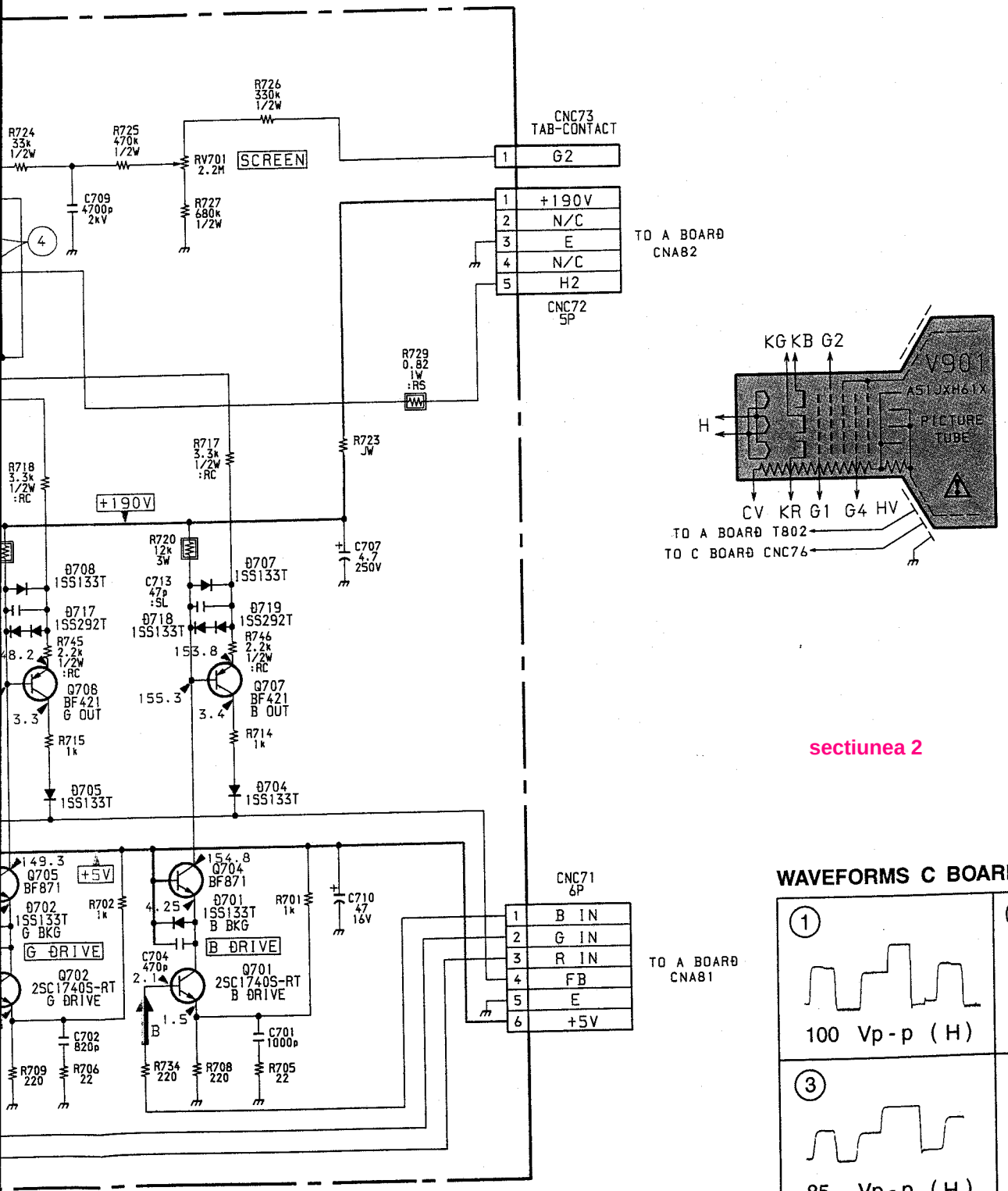


C [R.G.B OUT]

— C BOARD —

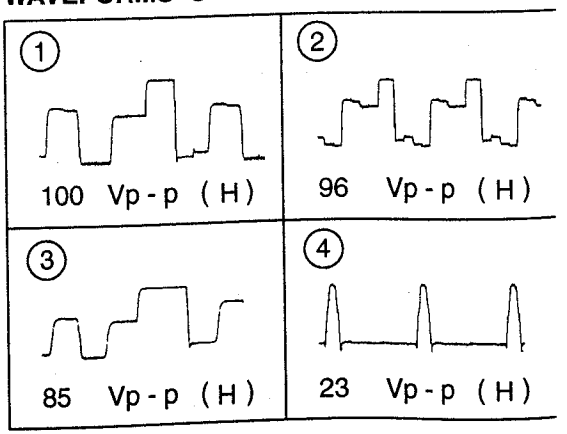



B-:SSBE4A<...>-C..-21M1/21T1
C (R, G, B OUT)
TO A BOARD T802 (FBT)
FV
TO V901 COATING EARTH
CNC76 TAB (CONTACT)
GND 1
H.STAT
RV702 110M 1/2W
RV701 2.2M SCREEN
R724 33k 1/2W
R725 470k 1/2W
R726 330k 1/2W
R727 680k 1/2W
C709 4700p 2kV
R729 0.82 1W :RS
R723 JW
C707 4.7 250V
R717 3.3k 1/2W :RC
R718 3.3k 1/2W :RC
R719 3.3k 1/2W :RC
+190V
R722 12k 3W
R721 12k 3W
R720 12k 3W
D709 1SS133T
D708 1SS133T
D707 1SS133T
D724 1SS292T
D717 1SS292T
D719 1SS292T
D723 1SS133T
D716 1SS133T
D718 1SS133T
C711 47p :SL
C712 47p :SL
C713 47p :SL
R744 2.2k 1/2W :RC
R745 2.2k 1/2W :RC
R746 2.2k 1/2W :RC
146.5
148.2
153.8
151.0
149.7
155.3
3.3
3.3
3.4
Q709 BF421 R OUT
Q708 BF421 G OUT
Q707 BF421 B OUT
R716 1k
R715 1k
R714 1k
D706 1SS133T
D705 1SS133T
D704 1SS133T
150.2
149.3
154.8
+5V
Q706 BF871
Q705 BF871
Q704 BF871
4.25
4.25
4.25
D703 1SS133T R BKG
D702 1SS133T G BKG
D701 1SS133T B BKG
R711 1k
R702 1k
R701 1k
C710 47 16V
R DRIVE
G DRIVE
B DRIVE
C706 470p
C705 470p
C704 470p
2.2
2.1
2.1
Q703 2SC1740S-RT R DRIVE
Q702 2SC1740S-RT G DRIVE
Q701 2SC1740S-RT B DRIVE
1.5
1.5
1.5
R
G
B
C703 820p
C702 820p
C701 1000p
R736 220
R710 220
R707 22
R735 220
R709 220
R706 22
R734 220
R708 220
R705 22
R700 100 1/2W
G1-1
G1-2
G1-3
H1
H2
G4
G2
GND
RCV
KR
KG
KB
1
2
3
4
sectiunea 1



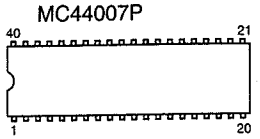
sectiunea 2

WAVEFORMS C BOARD



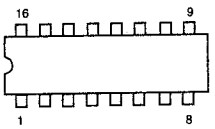
5-4. SEMICONDUCTORS

MC44002P
MC44007P



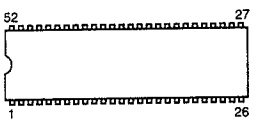
(TOP VIEW)

MC44140P



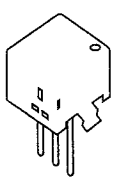
(TOP VIEW)

SAA5288ZP/014
SAA5290ZP/014

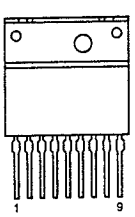


(TOP VIEW)

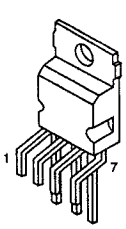
SBX1790-51



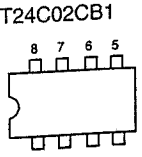
STR-S5706



STV9379

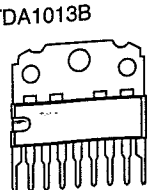


ST24C02CB1

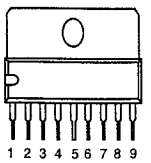


(TOP VIEW)

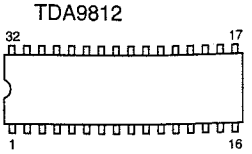
TDA1013B



TDA8139

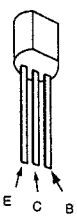


TDA9806
TDA9812

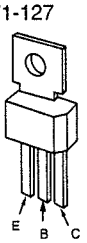


(TOP VIEW)

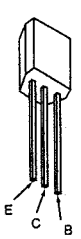
BF421
2SA1091-O



BF871-127



DTA144ES
DTC114ES
DTC144ES



DTC144EK
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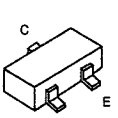
2SA1037K
2SC2412K-QR



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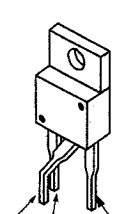

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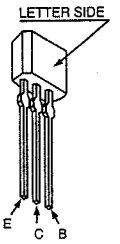
2SA933S
2SA1175-HFE
2SC2410SN



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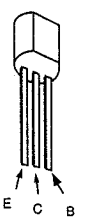
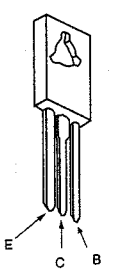
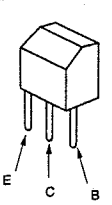
2SC2785-HFE



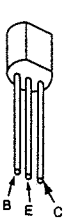
2SC2688-L



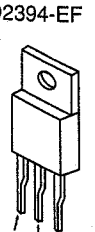
2SC3209LK
2SD774-34



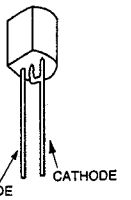
2SC3779C, D-AA



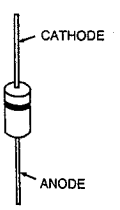
2SD1408-Y
2SD1761-E
2SD2394-EF



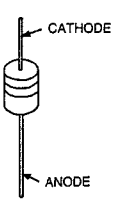
HZT33-02RE
UPC574J



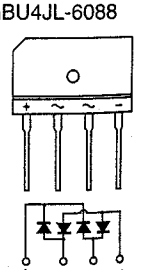
BYD33G	EU-1Z
EG-1Z-V1	RGP02-17EL-6433
EGP20G	RGP02-17PKG23
EL1Z	RGP10GPKG23
EM1-V1	RGP15J-6040FG23
ERC06-15S	RU3AM
ERD28-06S	1SS168
ERD28-08S	1SS238



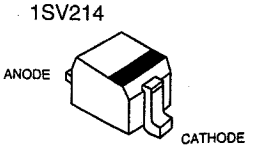
ERA81-004	RD5.1ESB2
ERA83-006	RD5.6ESB2
MTZJ-5.1B	RD6.8ESB2
MTZJ-5.6B	1SS133T-77
MTZJ-6.8A	



GBU4JL-6088



1SV214



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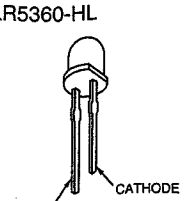


SECTION 6

EXPLODED VIEWS

NOTE :

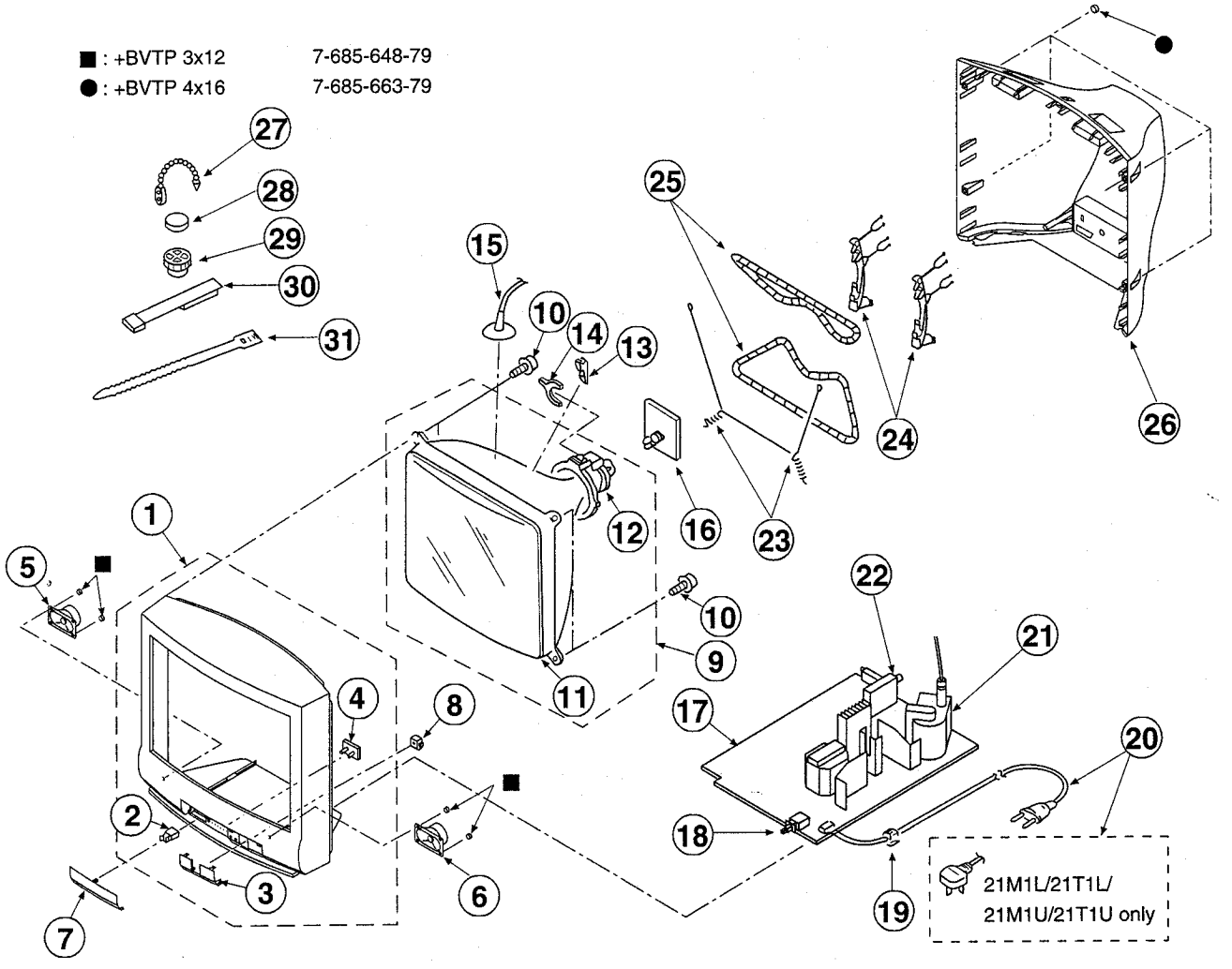
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

6-1. CHASSIS

■ : +BVTP 3x12 7-685-648-79
● : +BVTP 4x16 7-685-663-79



REF NO	PART NO	DESCRIPTION	REMARK
1	X-4200-265-1	BEZNET ASSY	2-4
2	4-047-464-01	CATCHER, PUSH	
3	4-203-432-01	WINDOW	
4	*4-203-431-01	GUIDE, LIGHT	
5	1-504-899-11	SPEAKER (9X5CM) (KV-21M1K/21T1K/21T1R)	
6	1-503-258-21	SPEAKER (KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/ 21M1E/21T1E/21M1L/21T1L/21M1U/21T1U)	
	1-504-899-11	SPEAKER (9X5CM) (KV-21M1K/21T1K/21T1R)	
7	4-203-430-01	DOOR (BARE) (KV-21M1A/21M1D/21M1E/ 21M1K/21M1L/21M1U)	
	4-203-435-21	DOOR (PRINTED) (KV-21T1A/21T1B/21T1D)	
	4-203-435-11	DOOR (PRINTED) (KV-21T1K/21T1L/21T1R 21T1U)	

REF NO	PART NO	DESCRIPTION	REMARK
8	4-203-433-01	BUTTON, POWER	
9	⚠ 8-738-781-03	TUBE, PICTURE (90 DEG) (A51QHC84X)	
10	4-036-190-01	SCREW (5), TAPPING	
11	⚠ 8-738-781-05	PICTURE TUBE (90 DEG) (A51QHC84X)	
12	⚠ 8-451-295-45	DEFLECTION YOKE (A71PAA78X)	
13	3-704-495-01	SPACER, DY	
14	1-452-277-00	MAGNET, BMC	
15	⚠ 1-537-006-21	CAP ASSY, HIGH VOLTAGE	
16	*A-1638-074-A	C BOARD, COMPLETE	

The components identified by shading and marked ! are critical for safety.
Replace only with the part number specified.

Les composants identifies par une trame et une marque ! sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

REF NO		PART NO	DESCRIPTION	REMARK
17		*A-1632-484-A	A BOARD, COMPLETE (KV-21M1A)	
		*A-1632-483-A	A BOARD, COMPLETE (KV-21T1A)	
		*A-1632-482-A	A BOARD, COMPLETE (KV-21M1B)	
		*A-1632-481-A	A BOARD, COMPLETE (KV-21T1B)	
		*A-1632-487-A	A BOARD, COMPLETE (KV-21M1D)	
		*A-1632-480-A	A BOARD, COMPLETE (KV-21T1D)	
		*A-1632-486-A	A BOARD, COMPLETE (KV-21M1E)	
		*A-1632-485-A	A BOARD, COMPLETE (KV-21T1E)	
		*A-1632-477-A	A BOARD, COMPLETE (KV-21M1K)	
		*A-1632-478-A	A BOARD, COMPLETE (KV-21T1K)	
		*A-1632-475-A	A BOARD, COMPLETE (KV-21M1L)	
		*A-1632-476-A	A BOARD, COMPLETE (KV-21T1L)	
		*A-1632-479-A	ABOARD, COMPLETE (KV-21T1R)	
		*A-1632-474-A	ABOARD, COMPLETE (KV-21M1U)	
		*A-1632-473-A	ABOARD, COMPLETE (KV-21T1U)	
18	⚠	1-571-433-21	SWITCH PUSH (AC POWER)	
19		*4-202-531-01	AC CORD LOCK (SC)	
20	⚠	1-690-270-21	CORD, POWER (WITH CONNECTOR) (KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/21M1E/21T1E/21M1K/21T1K/21T1R)	
	⚠	l-590-762-11	CORD, POWER (WITH PLUG) (KV-21M1L/21T1L/21M1U/21T1U)	
21	⚠	1-453-[illegible]-11	TRANSFORMER ASSY, FLYBACK (UX-1604A2)	
22		8-598-331-00	TUNER (BT-AC401) (KV-21M1A/21T1A/21M1E/21T1E/21M1K/21T1K)	
		I-693-310-11	TUNER (TELE4-002B) (KV-21M1B/21T1B/21M1D/21T1D/21T1R)	
		l-693-302-11	TUNER (UV1315) (KV-21M1L/21T1L)	
		8-598-333-00	TUNER (BT-AU601) (KV-21M1U/21T1U)	
23		4-369-318-21	SPRING, TENSION (KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/21M1E/21T1E)	
		4-200-433-01	SPRING, EXTENSION (KV-21M1K/21T1K/21M1L/21T1L/21T1R/21M1U/21T1U)	
24		'4-386-622-11	BAND, DGC (KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/21M1E/21T1E)	
		*4-386-622-04	BAND, DGC (KV-21M1K/21T1K/21T1R/21M1U/21T1U)	
25	⚠	1-406-828-11	COIL, DEGAUSSING	
26		4-203-429-01	COVER (REAR) (KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/21M1E/21T1E)	
		4-203-437-01	COVER (REAR) (KV-21M1K/21T1K/21T1R/21M1U/21T1U)	
27		4-308-870-00	CLIP, LEAD WIRE	
28		l-452-032-00	MAGNET, DISK; 10MM 0	
29		I-452-094-00	MAGNET, ROTATABLE DISK; 15MM 0	
30		X-4387-214-1	PERMALLOY ASSY, CORRECTION	
31		3-701-007-00	BAND, BINDING	

SECTION 7

ELECTRICAL PARTS LIST

When indicating parts by reference number, please include the board name.

CAPACITORS MF : mF, PF : mmF

COILS MMH : mH, μH : mH

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS

- All resistors are in ohms
- F : nonflammable

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

A

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1632-484-A	A BOARD, COMPLETE (KV-21M1A)	
		**********	
	*A-1632-483-A	A BOARD, COMPLETE (KV-21T1A)	
		**********	
	*A-1632-482-A	A BOARD, COMPLETE (KV-21M1B)	
		**********	
	*A-1632-481-A	A BOARD, COMPLETE (KV-21T1B)	
		**********	
	*A-1632-487-A	A BOARD, COMPLETE (KV-21M1D)	
		**********	
	*A-1632-480-A	A BOARD, COMPLETE (KV-21T1D)	
		**********	
	*A-1632-486-A	A BOARD, COMPLETE (KV-21M1E)	
		**********	
	*A-1632-485-A	A BOARD, COMPLETE (KV-21T1E)	
		**********	
	*A-1632-477-A	A BOARD, COMPLETE (KV-21M1K)	
		**********	
	*A-1632-478-A	A BOARD, COMPLETE (KV-21T1K)	
		**********	
	*A-1632-475-A	A BOARD, COMPLETE (KV-21M1L)	
		**********	
	*A-1632-476-A	A BOARD, COMPLETE (KV-21T1L)	
		**********	
	*A-1632-479-A	A BOARD, COMPLETE (KV-21T1R)	
		**********	
	*A-1632-474-A	A BOARD, COMPLETE (KV-21M1U)	
		**********	
	*A-1632-473-A	A BOARD, COMPLETE (KV-21T1U)	
		**********	
	4-201-023-11	SPACER, INSULATING	
	4-202-373-01	SPRING, IC	
	4-382-854-11	SCREW (M3X10), P, SW (+)	
		< CAPACITOR >	
C001	1-163-105-00	CERAMIC CHIP 33PF 5%	50V
C002	1-163-105-00	CERAMIC CHIP 33PF 5%	50V
C004	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C005	1-126-964-11	ELECT 10MF 20%	50V
C006	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C007	1-130-777-00	FILM 0.1MF 5%	63V
C008	1-126-965-11	ELECT 22MF 20%	50V
C010	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C011	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C012	1-163-031-11	CERAMIC CHIP 10000PF	50V
C014	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C015	1-126-964-11	ELECT 10MF 20%	50V
C016	1-164-005-11	CERAMIC CHIP 0.47MF	16V
		(KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/ 21M1E/21T1E/21M1L/21T1L/21M1K/21T1K/ 21M1U/21T1U)	
C017	1-164-005-11	CERAMIC CHIP 0.47MF	16V
		(KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/ 21M1E/21T1E/21M1L/21T1L/21M1K/21T1K/ 21M1U/21T1U)	
C019	1-124-903-11	ELECT 1MF 20%	50V
C020	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C021	1-163-059-00	CERAMIC CHIP 0.01MF	50V
C022	1-124-903-11	ELECT 1MF 20%	50V
C024	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C025	1-107-884-11	ELECT 1000MF 20%	16V
C026	1-126-925-11	ELECT 470MF 20%	10V
C027	1-163-038-00	CERAMIC CHIP 100000PF	25V
C028	1-163-055-00	CERAMIC CHIP 0.0047MF 10%	50V
C029	1-163-009-11	CERAMIC CHIP 1000PF 10%	50V
C030	1-164-232-11	CERAMIC CHIP 0.01MF 10%	50V
C031	1-163-009-11	CERAMIC CHIP 1000PF 5%	25V
C034	1-136-157-00	FILM 0.022MF 5%	50V
C036	1-164-222-11	CERAMIC CHIP 0.22MF	25V
C101	1-164-005-11	CERAMIC CHIP 0.47MF	16V
C102	1-164-005-11	CERAMIC CHIP 0.47MF	16V
C103	1-164-005-11	CERAMIC CHIP 0.47MF	16V
C104	1-164-232-11	CERAMIC CHIP 0.01MF 10%	50V
			(KV-21M1B/21T1B)
C106	1-164-326-91	CERAMIC CHIP MF %	V
			(KV-21M1K/21T1K/21T1R)
C107	1-164-326-91	CERAMIC CHIP MF %	V
			(KV-21M1K/21T1K/21T1R)
C109	1-163-038-00	CERAMIC CHIP 0.1MF	25V
			(KV-21M1B/21T1B)
C110	1-164-232-11	CERAMIC CHIP 0.01MF 10%	50V
			(KV-21M1B/21T1B)
C112	1-137-399-11	FILM 0.1MF 5%	50V
			(KV-21M1B/21T1B)
C114	1-136-169-00	FILM 0.22MF 5%	50V
		(KV-21M1A/21T1A/21M1D/21T1D/21M1E/21T1E/ 21M1K/21T1K/21M1L/21T1L/21T1R/21M1U/ 21T1U)	
	1-136-165-00	FILM 0.1MF 5%	50V
			(KV-21M1B/21T1B)
C116	1-124-925-11	ELECT 2.2MF 20%	50V
			(KV-21M1B/21T1B)

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REF.NO.	PART NO.	DESCRIPTION	REMARK
C117	1-163-035-00	CERAMIC CHIP 0.047MF 50V	
C120	1-126-926-11	ELECT 1000MF 20% 10V	
		(KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D)	
	1-126-925-11	ELECT 470MF 20% 10V	
		(KV-21M1E/21T1E/21M1K/21T1K/21M1L/21T1L/ 21T1R/21M1U/21T1U)	
C121	1-136-153-00	FILM 0.01MF 5% 50V	
C122	1-164-665-11	CERAMIC CHIP 0.039MF 10% 50V	
C123	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	
C124	1-164-665-11	CERAMIC CHIP 0.039MF 10% 50V	
C126	1-126-967-11	ELECT 47MF 20% 16V	
C127	1-126-965-11	ELECT 22MF 20% 50V	
C131	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V	
		(KV-21M1K/21T1K/21T1R)	
C134	1-163-463-91	CERAMIC CHIP MF % V	
		(KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/ 21M1E/21T1E)	
C138	1-124-925-11	ELECT 2.2MF 20% 50V	
C139	1-124-925-11	ELECT 2.2MF 20% 50V	
C140	1-163-031-11	CERAMIC CHIP 0.01MF 50V	
C141	1-126-965-11	ELECT 22MF 20% 50V	
C147	1-164-665-11	CERAMIC CHIP 0.039MF 10% 50V	
C149	1-163-101-00	CERAMIC CHIP 22PF 5% 50V	
C150	1-163-101-00	CERAMIC CHIP 22PF 5% 50V	
C151	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
		(KV-21M1K/21T1K/21M1L/21T1L/21T1R/21M1U/ 21T1U)	
C152	1-126-964-11	ELECT 10MF 20% 50V	
C153	1-163-097-00	CERAMIC CHIP 15PF 5% 50V	
		(KV-21M1K/21T1K/21M1L/21T1L/21T1R/21M1U/ 21T1U)	
C154	1-163-031-11	CERAMIC CHIP 0.01MF 50V	
C155	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C157	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C158	1-126-963-11	ELECT 4.7MF 20% 50V	
C161	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
		(KV-21M1B/21T1B)	
C162	1-126-967-11	ELECT 47MF 20% 16V	
C164	1-162-638-11	CERAMIC CHIP 1MF 16V	
		(KV-21M1B/21T1B)	
C165	1-126-967-11	ELECT 47MF 20% 16V	
C166	1-126-933-11	ELECT 100MF 20% 10V	
		(KV-21M1B/21T1B)	
C168	1-163-205-00	CERAMIC CHIP 0.001MF 10% 50V	
C169	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
C170	1-163-031-11	CERAMIC CHIP 0.01MF 50V	
C200	1-163-059-00	CERAMIC CHIP 0.01MF 50V	
C300	1-126-934-11	ELECT 220MF 20% 16V	
C301	1-163-077-00	CERAMIC CHIP 0.1MF 10% 25V	
C302	1-163-035-00	CERAMIC CHIP 0.047MF 50V	
C303	1-163-005-11	CERAMIC CHIP 470PF 10% 50V	
C304	1-163-059-91	CERAMIC CHIP 0.01MF 10% 50V	
C305	1-124-925-11	ELECT 2.2MF 20% 50V	
C306	1-136-164-00	FILM 0.082MF 5% 50V	
C307	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C308	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C309	1-126-963-11	ELECT 4.7MF 20% 50V	
C310	1-163-077-00	CERAMIC CHIP 0.1MF 10% 25V	
C312	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C313	1-163-007-11	CERAMIC CHIP 0.0015MF 10% 50V	
C314	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C315	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C316	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C317	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C318	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C319	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C320	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C321	1-126-963-11	ELECT 4.7MF 20% 50V	
C322	1-163-099-00	CERAMIC CHIP 18PF 5% 50V	
		(KV-21M1K/21T1K/21T1R)	
C323	1-163-163-00	CERAMIC CHIP 18PF 5% 50V	
C324	1-163-119-00	CERAMIC CHIP 120PF 5% 50V	
C325	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C326	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C327	1-163-005-11	CERAMIC CHIP 470PF 10% 50V	
C328	1-163-035-00	CERAMIC CHIP 0.047MF 50V	
C329	1-163-016-00	CERAMIC CHIP 0.0039MF 10% 50V	
C330	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C332	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C333	1-163-033-91	CERAMIC CHIP 0.022MF 50V	
C335	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C336	1-162-638-11	CERAMIC CHIP 1MF 16V	
C337	1-162-638-11	CERAMIC CHIP 1MF 16V	
C338	1-126-965-11	ELECT 22MF 20% 50V	
C339	1-163-031-11	CERAMIC CHIP 0.01MF 50V	
C340	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C341	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V	
C344	1-126-967-11	ELECT 47MF 20% 50V	
C345	1-163-139-00	CERAMIC CHIP 820PF 10% 50V	
C347	1-163-059-91	CERAMIC CHIP 0.01MF 10% 50V	
C348	1-163-031-11	CERAMIC CHIP 0.01MF 50V	
		(KV-21M1B/21T1B)	
C349	1-126-965-11	ELECT 22MF 20% 50V	
		(KV-21M1B/21T1B)	
C350	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V	
C353	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C354	1-163-197-00	CERAMIC CHIP 470PF 10% 50V	
C355	1-163-059-11	CERAMIC CHIP 0.01MF 50V	
C358	1-164-232-11	CERAMIC CHIP 0.01MF 10% 100V	
C359	1-126-964-11	ELECT 10MF 20% 50V	
C360	1-163-031-11	CERAMIC CHIP 0.01MF 50V	
C401	1-126-967-11	ELECT 47MF 20% 16V	
C402	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
C404	1-164-346-00	CERAMIC CHIP 1MF 16V	
C405	1-164-222-11	CERAMIC CHIP 0.22MF 25V	
C406	1-126-963-11	ELECT 4.7MF 20% 50V	
C407	1-104-666-11	ELECT 220MF 20% 25V	
C408	1-126-941-11	ELECT 470MF 20% 25V	
C409	1-163-005-11	CERAMIC CHIP 470PF 10% 50V	
C410	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C412	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C413	1-126-963-11	ELECT 4.7MF 20% 50V	
C414	1-216-295-00	METAL GLAZE 0 5% 1/10W	
C415	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
C417	1-163-031-11	CERAMIC CHIP 0.01MF 50V	
C501	1-126-963-11	ELECT 4.7MF 20% 50V	
C502	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C503	1-126-952-11	ELECT 1000MF 20% 35V	
C504	1-126-968-11	ELECT 100MF 20% 50V	
C505	1-126-941-11	ELECT 470MF 20% 25V	

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

A

REF.NO.		PART NO.	DESCRIPTION			REMARK
C506		1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C507		1-124-903-11	ELECT	1MF	20%	50V
C508		1-130-785-11	MYLAR	0.47MF	10%	100V
C509		1-163-035-00	CERAMIC CHIP	0.047MF		50V
C510		1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V
C600		1-126-967-11	ELECT	47MF	20%	50V
C601	⚠	1-136-516-12	FILM	0.1MF	20%	300V
C602	⚠	1-136-516-12	FILM	0.1MF	20%	300V
C603	⚠	1-161-964-91	CERAMIC	0.0047MF		250V
C604	⚠	1-161-964-91	CERAMIC	0.0047MF		250V
C606		1-113-473-11	CAP, ELECT	180MF		
C607		1-104-666-11	ELECT	220MF	20%	25V
C608		1-126-964-11	ELECT	10MF	20%	50V
C609		1-109-921-11	CERAMIC	0.0015MF	10%	500V
C610		1-104-665-11	ELECT	100MF	20%	25V
C611		1-126-964-11	ELECT	10MF	20%	50V
C612	⚠	1-113-907-51	CERAMIC	0.0022MF	20%	250V
C613	⚠	1-113-907-51	CERAMIC	0.0022MF	20%	250V
C614		1-136-538-11	FILM	0.001MF	3%	2KV
C615		1-163-031-11	CERAMIC CHIP	0.01MF		50V
C618		1-162-116-00	CERAMIC	680PF	10%	2KV
C619		1-102-228-00	CERAMIC	470PF	10%	500V
C620		1-124-347-00	ELECT	100MF	20%	160V
C621		1-126-942-61	ELECT	1000MF	20%	25V
C622		1-111-041-11	ELECT	0.001F	20%	16V
C625		1-163-081-00	CERAMIC CHIP	0.22MF		25V
C626		1-104-661-91	ELECT	330MF	20%	16V
C627		1-126-933-11	ELECT	100MF	20%	16V
C628	⚠	1-161-964-91	CERAMIC	0.0047MF		250V
C800		1-107-642-91	ELECT	3.3MF	20%	200V
C801		1-129-746-00	FILM	0.039MF	10%	400V
C803		1-136-109-00	FILM	0.68MF	5%	200V
C804		1-124-902-00	ELECT	0.47MF	20%	50V
C806		1-102-244-00	CERAMIC	220PF	10%	500V
C807		1-107-651-11	ELECT	4.7MF	20%	250V
C808		1-136-079-00	FILM	0.01MF	3%	2KV
C809		1-161-754-00	CERAMIC	0.001MF	10%	2KV
C810		1-129-702-00	FILM	0.001MF	10%	400V
C811		1-102-228-00	CERAMIC	470PF	10%	500V
C812		1-163-059-91	CERAMIC CHIP	0.01MF	10%	50V
C813		1-162-115-00	CERAMIC	330PF	10%	2KV
C814		1-136-159-00	FILM	0.033MF	5%	50V
C815		1-162-116-00	CERAMIC	680PF	10%	2KV
C816		1-162-114-00	CERAMIC	0.0047MF		2KV
C817		1-136-559-11	MYLAR	0.0047MF	10%	400V
C818		1-136-933-11	FILM	1MF	5%	100V
C819		1-162-318-11	CERAMIC	0.001MF	10%	500V
C820		1-126-951-11	ELECT	470MF	20%	35V
C822		1-104-696-11	FILM	0.015MF	10%	100V
C823		1-106-375-12	MYLAR	0.022MF	10%	250V
C824		1-106-367-00	MYLAR	0.01MF	10%	400V
C827		1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V
C828		1-124-903-11	ELECT	1MF	20%	50V

< FILTER >

CF101	1-404-801-11	TRAP, CERAMIC	(KV-21M1A/21T1A/21M1D/21T1D/21M1E/21T1E/21M1K/21T1K/21T1R)
	1-409-430-11	TRAP, CERAMIC	(KV-21M1B/21T1B)
	1-409-429-11	TRAP, CERAMIC	(KV-21M1L/21T1L/21M1U/21T1U)
CF102	1-409-327-00	TRAP, CERAMIC (6.5 MHz)	(KV-14E1K/21T1K/21T1R)
CF103	1-760-106-11	FILTER, CERAMIC	(KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/21M1E/21T1E/21M1K/21T1K/21T1R)
	1-567-100-00	FILTER, CERAMIC	(KV-21M1L/21T1L/21M1U/21T1U)
CF104	1-567-101-11	FILTER, CERAMIC	(KV-14E1K/21T1K/21T1R)
CF105	1-760-154-11	TRAP, CERAMIC	(KV-21M1B/21T1B/21M1U/21T1U)
SWF101	1-579-120-11	FILTER, SURFACE WAVE	(KV-21M1A/21T1A/21M1D/21T1D/21M1E/21T1E)
	1-579-273-11	FILTER, SURFACE WAVE	(KV-21M1B/21T1B)
	1-579-414-11	FILTER, SURFACE WAVE	(KV-21M1K/21T1K/21T1R)
	1-760-711-11	FILTER, SURFACE WAVE	(KV-21M1L/21T1L/21M1U/21T1U)
SWF102	1-760-722-11	FILTER, SURFACE WAVE	(KV-21M1B/21T1B)

< CONNECTOR >

CN001	*1-564-508-11	PLUG, CONNECTOR 5P	
CN201	*1-564-506-11	PLUG, CONNECTOR 3P	(KV-21M1A/21T1A/21M1B/21T1B/21M1D/21M1E/21T1E/21M1L/21T1L/21M1U/21T1U)
	*1-564-507-11	PLUG, CONNECTOR 4P	(KV-21M1D/21M1K/21T1K/21T1R)
CN601	⚠ *1-580-844-11	PIN, CONNECTOR (POWER)	
CN602	⚠ 1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	(KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/21M1E/21T1E)
CN603	⚠ 1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P	
CN801	*1-580-798-11	CONNECTOR PIN (DY) 6P	
CNA81	*1-568-881-51	PIN, CONNECTOR 6P	
CNA82	*1-568-880-51	PIN, CONNECTOR 5P	

< DIODE >

D001	8-719-057-56	DIODE LS5360HL	
D002	8-759-157-40	DIODE µPC574J	
D003	8-719-109-89	DIODE RD5.6ESB2	
D004	8-719-109-85	DIODE RD5.1ES-B2	
D005	8-719-991-33	DIODE 1SS133T-77	
D006	8-719-991-33	DIODE 1SS133T-77	
D014	8-719-991-33	DIODE 1SS133T-77	
D100	8-719-991-33	DIODE 1SS133T-77	
D102	8-719-903-27	DIODE 1SS238-TPA7	(KV-21M1B/21T1B)
D104	8-719-903-27	DIODE 1SS238-TPA7	(KV-21M1B/21T1B)
D105	8-719-991-33	DIODE 1SS133T-77	(KV-21M1K/21T1K/21T1R)
D106	8-719-991-33	DIODE 1SS133T-77	(KV-21M1K/21T1K/21T1R)
D107	8-719-991-33	DIODE 1SS133T-77	
D109	8-719-820-71	DIODE 1SV214	(KV-21M1K/21T1K/21M1L/21T1L/21T1R/21M1U/21T1U)
D301	8-719-991-33	DIODE 1SS133T-77	
D302	8-719-991-33	DIODE 1SS133T-77	
D305	1-249-412-11	CARBON 390 5% 1/4W	
D307	8-719-991-33	DIODE 1SS133T-77	(KV-21M1B/21T1B)
D308	8-719-991-33	DIODE 1SS133T-77	(KV-21M1B/21T1B)
D310	8-719-991-33	DIODE 1SS133T-77	

The components identified by shading and marked ! are critical for safety.
Replace only with the part number specified.

Les composants identifies par une trame et une marque ! sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

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REF.NO.	PART NO.	DESCRIPTION	REMARK
D315	E-719-991-33	DIODE 1SS133T-77	
D401	8-719-109-97	DIODE RD6.8ES-B2	
D402	E-719-109-97	DIODE RD6.8ES-B2	
D403	E-719-109-97	DIODE RD6.8ES-B2	
D404	E-719-109-97	DIODE RD6.8ES-B2	
D405	E-719-109-97	DIODE RD6.8ES-B2	
D406	E-719-109-97	DIODE RD6.8ES-B2	
D407	E-719-109-97	DIODE RD6.8ES-B2	
D408	E-719-109-97	DIODE RD6.8ES-B2	
0409	E-719-991-33	DIODE 1SS133T-77	
D410	E-719-109-97	DIODE RD6.8ES-B2	
D412	8-719-109-97	DIODE RD6.8ES-B2	
D414	E-719-991-33	DIODE 1SS133T-77	
D501	E-719-302-43	DIODE EL1Z	
D600	E-719-991-33	DIODE 1SS133T-77	
D601	8-719-046-77	DIODE EM1-V1	
D602	E-719-312-61	DIODE EU-1Z	
D603	E-719-046-78	DIODE EG-1Z-V1	
D604	E-719-312-61	DIODE EU-1Z	
D605	E-719-312-61	DIODE EU-IZ	
D606	8-719-979-85	DIODE EGP20G	
D607	E-719-302-43	DIODE ELIZ	
D608	8-719-980-78	DIODE ERA83-006	
D610	8-719-025-88	DIODE GBU4JL-6088	
D611	E-719-991-33	DIODE 1SS133T-77	
D613	E-719-109-89	DIODE RD5.6ESB2	
D614	E-719-109-89	DIODE RD5.6ESB2	
D801	8-719-950-57	DIODE BYD33G	
D802	E-719-302-43	DIODE ELIZ	
D803	E-719-945-80	DIODE ERC06-15S	
D804	8-719-028-72	DIODE RGP02-17EL-6433	
0805	8-719-928-08	DIODE ERD28-08S	
D806	E-719-302-43	DIODE ELIZ	
D807	E-719-991-33	DIODE 1SS133T-77	
D809	E-719-302-43	DIODE ELIZ	
		< FUSE >	
F601	⚠ I-576-231-11	FUSE (H.B.C.) 4A, 250V	
	⚠ l-533-725-11	HOLDER, FUSE ; F601 (KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/21M1E/21T1E)	
	⚠ l-533-230-12	HOLDER, FUSE ; F601 (KV-21M1K/21T1K/21M1L/21T1L/21T1R/21M1U/21T1U)	
		< FERRITE BEAD >	
FB001	I-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB002	I-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB601	l-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB603	I-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB604	I-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB605	l-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB801	l-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
		< IC >	
IC001	8-759-368-69	IC SAA5288ZP/014 (KV-21M1A/21M1B/21M1D/21M1E/21M1K/21M1L/21M1U)	
	E-759-368-23	IC SAA5290ZP/014 (KV-21T1A/21T1B/21T1D/21T1E/21T1K/21T1L/21T1R/21T1U)	
IC002	E-759-280-74	IC ST24C02CB1	
IC003	E-747-905-11	IC SBX1790-51	
ICI01	E-759-333-19	IC TDA9806 (KV-21M1A/21T1A/21M1D/21T1D/21M1E/21T1E/21M1K/21T1K/21M1L/21T1L/21T1R/21M1U/2ITIU)	
	8-759-333-17	IC TDA9812 (KV-21M1B/21T1B)	
IC301	E-759-333-44	IC MC44007P (KV-21M1A/21T1A/21M1E/21T1E/21M1L/21T1L/21M1U/21T1U)	
	8-759-333-45	IC MC44002P (KV-21M1B/21T1B/21M1D/21T1D/21M1K/21T1K/21T1R)	
IC302	8-759-333-46	IC MC44140P	
IC401	E-759-041-82	IC TDA1013B	
IC501	E-759-192-78	IC STV9379	
IC601	E-749-011-02	IC STR-S5706	
IC603	E-759-337-99	IC TDA8139	
		< SOCKET >	
J201	l-568-267-21	JACK	
J401	l-561-534-00	SOCKET, PIN 21P	
51401	l-778-054-11	JACK PIN	
		< COIL >	
L101	l-410-669-31	INDUCTOR 33UH	
L105	1-408-411-00	INDUCTOR 15UH	
L108	l-408-408-00	INDUCTOR 8.2UH (KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/21M1E/21T1E/21M1L/21T1L/21M1U/21T1U)	
	l-408-405-00	INDUCTOR 4.7UH (KV-21M1K/21T1K/21T1R)	
L109	l-403-686-12	COIL	
L110	l-410-673-41	INDUCTOR 68UH	
L111	l-410-665-31	INDUCTOR 15UH (KV-21M1B/21T1B)	
LI12	l-408-417-00	INDUCTOR 47UH	
LI13	I-410-985-11	INDUCTOR CHIP 0.22UH	
L201	l-412-531-31	INDUCTOR 33UH	
L401	l-408-409-00	INDUCTOR 10UH	
L602	l-408-609-41	INDUCTOR 33UH	
L603	l-410-669-31	INDUCTOR 33UH	
L604	l-408-417-00	INDUCTOR 47UH	
L800	l-412-553-11	INDUCTOR 3.3MMH	
L801	l-420-872-00	COIL,AIR-CORE	
L802	I-407-365-00	COIL,CHOKE (KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/21M1E/21T1E)	
	l-411-635-11	COIL,AIR-CORE (KV-21M1K/21T1K/21M1L/21T1L/21T1R/21M1U/21T1U)	
L803	l-459-390-00	COIL (WITH CORE)	
L804	l-459-105-21	COIL (WITH CORE)	
L805	l-412-531-31	INDUCTOR 33UH	
L806	l-459-652-12	HLC	
		< IC LINK >	
PS602	⚠ 1-532-686-91	LINK, XC 2.7A (ICP-F75)	
PS603	⚠ 1-532-686-91	LINK, IC 2.7A (ICP-F75)	

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REF.NO.	PART NO.	DESCRIPTION	REMARK
		< TRANSISTOR >	
Q001	8-729-922-66	TRANSISTOR 2SC2410SN	
Q002	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q005	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q006	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q007	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q008	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q009	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q010	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q011	8-729-900-89	TRANSISTOR DTC144ES	
Q012	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q013	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q014	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q015	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q016	8-729-216-22	TRANSISTOR 2SC1162-G	
Q100	8-729-901-01	TRANSISTOR DTC144EK	
Q101	8-729-900-80	TRANSISTOR DTC114ES (KV-21M1B/21T1B)	
Q102	8-729-900-80	TRANSISTOR DTC114ES (KV-21M1B/21T1B)	
Q103	8-729-900-80	TRANSISTOR DTC114ES (KV-21M1B/21T1B)	
Q105	8-729-901-01	TRANSISTOR DTC144EK	
Q107	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q109	8-729-022-54	TRANSISTOR 2SC3779C,D-AA (KV-21M1B/21T1B)	
Q111	8-729-900-89	TRANSISTOR DTC144ES (KV-21M1K/21T1K/21T1R)	
Q112	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q113	8-729-900-89	TRANSISTOR DTC144ES (KV-21M1K/21T1K/21T1R)	
Q114	8-729-901-01	TRANSISTOR DTC144EK	
Q115	8-729-026-41	TRANSISTOR 2SA933AS-RT (KV-21M1B/21T1B)	
Q116	8-729-900-89	TRANSISTOR DTC144ES (KV-21M1B/21T1B)	
Q300	8-729-900-80	TRANSISTOR DTC114ES	
Q301	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q302	8-729-900-80	TRANSISTOR DTC114ES	
Q303	8-729-900-80	TRANSISTOR DTC114ES	
Q304	8-729-900-80	TRANSISTOR DTC114ES	
Q305	8-729-900-80	TRANSISTOR DTC114ES	
Q306	8-729-900-80	TRANSISTOR DTC114ES	
Q307	8-729-026-41	TRANSISTOR 2SA933AS-RT (KV-21M1B/21T1B)	
Q308	8-729-901-01	TRANSISTOR DTC144EK (KV-21M1B/21T1B/21M1D/21T1D/21M1K/21T1K/21T1K/21T1R)	
Q401	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q402	8-729-216-22	TRANSISTOR 2SA1162-G	
Q403	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q404	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q600	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q602	8-729-900-65	TRANSISTOR DTA144ES	
Q801	8-729-140-96	TRANSISTOR 2SD774-34	
Q802	8-729-033-85	TRANSISTOR S2000N-16E305A	
Q803	8-729-900-89	TRANSISTOR DTC144ES	
Q804	8-729-019-01	TRANSISTOR 2SD2394-EF	
Q805	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		< RESISTOR >	
JR003	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JR004	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JR007	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR008	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR009	1-216-295-00	METAL GLAZE 0 5% 1/10W	

REF.NO.	PART NO.	DESCRIPTION	REMARK
JR011	1-216-295-00	METAL GLAZE 0 5% 1/10W	(KV-21M1B/21T1B)
JR012	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR013	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR014	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JR015	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR017	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR018	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JR019	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JR021	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JR022	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JR023	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR027	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JR028	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JR029	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR030	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JR031	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JR032	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JR034	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JR035	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JW101	1-249-413-11	CARBON 470 5% 1/4W	
R001	1-216-198-91	METAL GLAZE 1K 5% 1/8W	
R002	1-216-033-00	METAL GLAZE 2.2K 5% 1/10W	
R005	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R006	1-216-089-00	METAL GLAZE 47K 5% 1/10W (KV-21M1A/21T1A/21M1E/21T1E/21M1L/21T1L/21M1U/21T1U)	
	1-216-085-00	METAL GLAZE 33K 5% 1/10W (KV-21M1B/21T1B/21M1D/21T1D/21M1K/21T1K/21T1R)	
R008	1-216-031-00	METAL GLAZE 180 5% 1/10W	
R009	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R010	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R011	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R012	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R013	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R014	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R015	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R016	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R017	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R018	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R019	1-216-174-00	METAL GLAZE 100 5% 1/8W	
R020	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R021	1-216-174-00	METAL GLAZE 100 5% 1/8W	
R022	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R024	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R025	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R026	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R027	1-216-206-00	METAL GLAZE 2.2K 5% 1/8W	
R028	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R029	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R030	1-215-900-11	METAL OXIDE 22K 5% 2W F	
R031	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R032	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R033	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R034	1-249-429-11	CARBON 10K 5% 1/4W	
R035	1-247-863-91	CARBON 22K 5% 1/4W	
R036	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R037	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R039	1-216-089-00	METAL GLAZE 47K 5% 1/10W	

REF.NO.	PART NO.	DESCRIPTION	REMARK
R040	l-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R042	l-216-230-00	METAL GLAZE 22K 5%	1/8W
A044	l-216-073-00	METAL GLAZE 10K 5%	1/10W
R045	l-216-081-00	METAL GLAZE 22K 5%	1/10W
R046	l-216-105-91	METAL GLAZE 220K 5%	1/10W
R047	l-216-077-00	METAL GLAZE 15K 5%	1/10W
R048	l-216-174-00	METAL GLAZE 100 5%	1/8W
R049	l-216-041-00	METAL GLAZE 470 5%	1/10W
R052	1-216-238-91	METAL GLAZE 47K 5%	1/8W
R055	l-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R060	l-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R061	l-216-073-00	METAL GLAZE 10K 5%	1/10W
R062	l-216-073-00	METAL GLAZE 10K 5%	1/10W
R063	l-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R064	l-216-073-00	METAL GLAZE 10K 5%	1/10W
R065	l-216-073-00	METAL GLAZE 10K 5%	1/10W
R066	l-216-073-00	METAL GLAZE 10K 5%	1/10W
R067	l-216-081-00	METAL GLAZE 22K 5%	1/10W
R068	l-216-073-00	METAL GLAZE 10K 5%	1/10W
R069	1-247-863-91	CARBON 22K 5%	1/4W
R070	l-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R071	l-216-081-00	METAL GLAZE 22K 5%	1/10W
R072	I-216-230-00	METAL GLAZE 22K 5%	1/8W
R073	l-216-089-00	METAL GLAZE 47K 5%	1/10W
R074	l-216-073-00	METAL GLAZE 10K 5%	1/10W
R075	1-249-436-11	CARBON 39K 5%	1/4W
R078	l-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R079	l-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R080	l-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R081	1-249-438-11	CARBON 56K 5%	1/4W
R088	l-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R089	l-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R090	l-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R091	1-249-427-11	CARBON 6.8K 5%	1/4W
R093	l-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R094	l-216-085-00	METAL GLAZE 33K 5%	1/10W
R095	l-216-081-00	METAL GLAZE 22K 5%	1/10W
R096	l-216-033-00	METAL GLAZE 220 5%	1/10W
R097	l-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R098	l-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R099	l-216-200-11	METAL GLAZE 1.2K 5%	1/8W
R102	l-216-234-00	METAL GLAZE 33K 5%	1/8W
R104	l-216-059-00	METAL GLAZE 2.7K 5%	1/10W (KV-21M1B/21T1B)
R105	l-216-025-00	METAL GLAZE 100 5%	1/10W (KV-21M1B/21T1B)
R106	l-216-053-00	METAL GLAZE 1.5K 5%	1/10W (KV-21M1B/21T1B)
R107	l-216-017-91	METAL GLAZE 47 5%	1/10W (KV-21M1B/21T1B)
R108	l-216-067-00	METAL GLAZE 5.6K 5%	1/10W
R109	l-216-025-00	METAL GLAZE 100 5%	1/10W (KV-21M1B/21T1B)
R110	l-216-101-00	METAL GLAZE 150K 5%	1/10W
Rlll	l-216-085-00	METAL GLAZE 33K 5%	1/10W
R112	l-216-057-00	METAL GLAZE 2.2K 5%	1/10W (KV-21M1B/21T1B)
R113	l-216-057-00	METAL GLAZE 2.2K 5%	1/10W (KV-21M1B/21T1B)
R114	l-216-073-00	METAL GLAZE 10K 5%	1,10W (KV-21M1B/21T1B)

REF.NO.	PART NO.	DESCRIPTION	REMARK
R115	l-216-057-00	METAL GLAZE 2.2K 5%	1/10W (KV-21M1B/21T1B)
R116	l-216-049-00	METAL GLAZE 1K 5%	1/10W
R117	l-216-089-00	METAL GLAZE 47K 5%	1/10W
R118	l-216-075-00	METAL GLAZE 12K 5%	1/10W
R122	l-216-029-00	METAL GLAZE 150 5%	1/10W
R123	l-216-089-00	METAL GLAZE 47K 5%	1/10W
R124	l-216-025-00	METAL GLAZE 100 5%	1/10W
R125	*l-216-025-00*	METAL GLAZE 100 5%	1/10W
R126	1-216-025-00	METAL GLAZE 100 5%	1/10W
R127	*l-216-180-00*	METAL GLAZE 180 5%	1/8W
R128	l-216-073-00	METAL GLAZE 10K 5%	1/10W
R133	1-249-429-11	CARBON 10K 5%	1/4W
R134	l-216-031-00	METAL GLAZE 180 5%	1/10W (KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/21M1E/21T1E/21M1K/21T1K/21T1R)
	l-216-029-11	METAL GLAZE 150 5%	1/10W (KV-21M1L/21T1L/21M1U/21T1U)
R136	*l-216-061-00*	METAL GLAZE 3.3K 5%	1/10W
R137	l-216-109-00	METAL GLAZE 330K 5%	1/10W
R138	l-216-081-00	METAL GLAZE 22K 5%	1/10W
R141	*l-216-057-00*	METAL GLAZE 2.2K 5%	1/10W
R142	l-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R143	l-216-295-00	METAL GLAZE 0 5%	1/10W
R144	*l-216-206-00*	METAL GLAZE 2.2K 5%	1/8W (KV-21M1K/21T1K/21T1R)
R145	l-216-206-00	METAL GLAZE 2.2K 5%	1/8W (KV-21M1K/21T1K/21T1R)
R146	l-216-043-91	METAL GLAZE 560 5%	1/10W
R147	l-216-043-91	METAL GLAZE 560 5%	1/10W (KV-21M1K/21T1K/21T1R)
R149	l-216-057-00	METAL GLAZE 2.2K 5%	1/10W (KV-21M1K/21T1K/21T1R)
R151	l-216-097-00	METAL GLAZE 100K 5%	1/10W (KV-21M1K/21T1K/21M1L/21T1L/21T1R/21M1U/21T1U)
R153	l-216-097-00	METAL GLAZE 100K 5%	1/10W (KV-21M1K/21T1K/21M1L/21T1L/21T1R/21M1U/21T1U)
R154	*l-216-081-00*	METAL GLAZE 22K 5%	1/10W
R155	*l-216-081-00*	METAL GLAZE 22K 5%	1/10W
R157	l-216-049-00	METAL GLAZE 1K 5%	1/10W (KV-21M1B/21T1B)
R158	l-216-039-00	METAL GLAZE 390 5%	1/10W (KV-21M1A/21T1A/21M1D/21T1D/21M1E/21T1E/21M1K/21T1K/21M1L/21T1L/21T1R/21M1U/21T1U)
	l-216-031-00	METAL GLAZE 180 5%	1/10W (KV-21M1B/21T1B)
R159	*l-216-061-00*	METAL GLAZE 3.3K 5%	1/10W
R160	1-216-238-91	METAL GLAZE 47K 5%	1/8W
R161	l-216-295-00	METAL GLAZE 0 5%	1/10W (KV-21M1A/21T1A/21M1D/21T1D/21M1E/21T1E/21M1K/21T1K/21M1L/21T1L/21T1R/21M1U/21T1U)
R162	l-216-017-91	METAL GLAZE 47 5%	1/10W (KV-21M1B/21T1B)
R163	l-249-407-11	CARBON 150 5%	1/4W
R167	*l-216-246-00*	METAL GLAZE 100K 5%	1/8W
R168	l-249-407-11	CARBON 150 5%	1/4W

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REF.NO.	PART NO.	DESCRIPTION	REMARK
R169	1-216-073-00	METAL GLAZE 10K 5% 1/10W	(KV-21M1B/21T1B)
R170	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	(KV-21M1B/21T1B)
R171	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	(KV-21M1B/21T1B)
R175	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R176	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R177	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R178	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R179	1-216-212-00	METAL GLAZE 3.9K 5% 1/8W	
R180	1-216-049-00	METAL GLAZE 1K 5% 1/10W	(KV-21M1B/21T1B)
R181	1-216-182-00	METAL GLAZE 220 5% 1/8W	
R182	1-216-182-00	METAL GLAZE 220 5% 1/8W	
R205	1-247-741-11	CARBON 150 5% 1/2W	
R301	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R302	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R303	1-216-090-00	METAL GLAZE 51K 5% 1/10W	
R304	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R305	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R306	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R307	1-216-121-91	METAL GLAZE 1M 5% 1/10W	
R308	1-216-234-00	METAL GLAZE 33K 5% 1/8W	
R309	1-216-121-91	METAL GLAZE 1M 5% 1/10W	
R310	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R311	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R312	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R313	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R314	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R315	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R316	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R317	1-216-182-00	METAL GLAZE 220 5% 1/8W	
R318	1-216-019-00	METAL GLAZE 56 5% 1/10W	
R322	1-216-022-00	METAL GLAZE 75 5% 1/10W	
R323	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R325	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R326	1-216-095-00	METAL GLAZE 82K 5% 1/10W	(KV-21M1B/21T1B/21M1D/21T1D/21M1K/21T1K/21T1R)
R327	1-216-097-00	METAL GLAZE 100K 5% 1/10W	(KV-21M1B/21T1B/21M1D/21T1D/21M1K/21T1K/21T1R)
R328	1-216-258-00	METAL GLAZE 330K 5% 1/8W	
R330	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R333	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R334	1-216-025-71	METAL GLAZE 100 5% 1/10W	
R335	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R336	1-216-296-00	METAL GLAZE 0 5% 1/8W	
R337	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R339	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R340	1-216-121-91	METAL GLAZE 1M 5% 1/10W	
R341	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R342	1-216-186-00	METAL GLAZE 330 5% 1/8W	
R343	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R344	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R345	1-216-238-91	METAL GLAZE 47K 5% 1/8W	
R347	1-216-041-00	METAL GLAZE 470 5% 1/10W	(KV-21M1B/21T1B)
R348	1-216-073-00	METAL GLAZE 10K 5% 1/10W	(KV-21M1B/21T1B)
R349	1-216-105-91	METAL GLAZE 220K 5% 1/10W	(KV-21M1B/21T1B)
R350	1-216-033-00	METAL GLAZE 220 5% 1/10W	(KV-21M1B/21T1B)
R351	1-216-292-11	METAL GLAZE 8.2M 5% 1/8W	(KV-21M1B/21T1B/21M1D/21T1D/21M1K/21T1K/21T1R)
R352	1-216-262-00	METAL GLAZE 470K 5% 1/8W	
R353	1-247-804-11	CARBON 75 5% 1/4W	
R354	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R355	1-216-121-91	METAL GLAZE 1M 5% 1/10W	
R356	1-216-119-00	METAL GLAZE 820K 5% 1/10W	
R357	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
R358	1-216-009-00	METAL GLAZE 22 5% 1/10W	
R359	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R361	1-216-023-00	METAL GLAZE 82 5% 1/10W	
R362	1-216-023-00	METAL GLAZE 82 5% 1/10W	
R363	1-216-023-00	METAL GLAZE 82 5% 1/10W	
R401	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R402	1-249-431-11	CARBON 15K 5% 1/4W	
R403	1-249-431-11	CARBON 15K 5% 1/4W	
R405	1-249-389-11	CARBON 4.7 5% 1/4W F	
R406	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R407	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R408	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R409	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R410	1-247-804-11	METAL GLAZE 75 5% 1/4W	(KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/21M1E/21T1E/21M1K/21T1K/21T1R)
	1-247-698-11	METAL GLAZE 68 5% 1/4W	(KV-21M1L/21T1L/21M1U/21T1U)
R411	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R412	1-216-105-91	METAL GLAZE 220K 5% 1/10W	
R413	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R414	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R415	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R416	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R417	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R501	1-208-806-11	METAL CHIP 10K 0.50% 1/10W	
R502	1-216-677-11	METAL CHIP 12K 0.50% 1/10W	
R503	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R504	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
R505	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R506	1-216-080-00	METAL GLAZE 20K 5% 1/10W	
R507	1-216-350-11	METAL OXIDE 1.2 5% 1W F	
R508	1-215-865-11	METAL OXIDE 220 5% 1W F	
R509	1-249-387-11	CARBON 3.3 5% 1/4W F	
R600	1-216-365-00	METAL OXIDE 0.47 5% 2W F	
R601 ⚠	1-205-909-11	WIREWOUND 3.3 5% 10W	
R603	1-215-858-11	METAL OXIDE 15 5% 1W F	
R604	1-215-927-00	METAL OXIDE 47K 5% 3W F	
R606	1-249-441-11	CARBON 100K 5% 1/4W	
R607	1-216-366-00	METAL OXIDE 0.56 5% 2W F	
R608	1-216-645-11	METAL CHIP 560 0.50% 1/10W	
R609	1-215-859-00	METAL OXIDE 22 5% 1W F	
R610	1-249-419-11	CARBON 1.5K 5% 1/4W	
R611	1-215-430-00	METAL 2.4K 1% 1/4W	
R612 ⚠	1-202-719-91	SOLID 1M 10% 1/2W	
R614 ⚠	1-218-265-21	METAL 8.2M 5% 1W	
R615	1-217-418-61	FUSIBLE 0.47 10% 1/2W F	

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REF.NO.	PART NO.	DESCRIPTION	REMARK
R617	1-216-659-11	METAL CHIP 2.2K 0.50% 1/10W	
R618	1-216-659-11	METAL CHIP 2.2K 0.50% 1/10W	
R620	1-215-479-00	METAL 270K 1% 1/4W	
R621	1-249-429-11	CARBON 10K 5% 1/4W	
R622	1-247-895-91	METAL GLAZE 470K 5% 1/4W	
R623	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R624	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R625	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R626	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R627	1-216-346-00	METAL OXIDE 0.56 5% 1W	F
R630	1-249-401-11	CARBON 47 5% 1/4W	
R800	1-215-887-00	METAL OXIDE 150 5% 2W	F
R801	1-247-891-00	CARBON 330K 5% 1/4W	
R802	1-247-807-31	CARBON 100 5% 1/4W	
R803	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R804	1-217-778-11	FUSIBLE 1K 5% 1W	F
R806	1-216-349-00	METAL OXIDE 1 5% 1W	F
R807	1-249-399-11	METAL GLAZE 33 5% 1/10W	
R808	1-202-833-11	SOLID 18K 10% 1/2W	
R810	1-247-895-91	CARBON 470K 5% 1/4W	
R811	1-215-890-11	METAL OXIDE 470 5% 2W	F
R812	1-215-869-11	METAL OXIDE 1K 5% 1W	F
R813	1-216-266-00	METAL GLAZE 680K 5% 1/8W	
R814	1-249-443-11	CARBON 0.47 5% 1/4W	F
R815	1-216-250-00	METAL GLAZE 150K 5% 1/8W	
R816	1-216-369-00	METAL OXIDE 1 5% 2W	F
R817	1-216-447-00	METAL OXIDE 27 5% 2W	F
R818	1-202-813-00	SOLID 22K 10% 1/2W	
R819	1-249-441-11	CARBON 100K 5% 1/4W	
R820	1-249-935-11	CARBON 3.3K 5% 1/4W	
R821	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R822	1-216-107-00	METAL GLAZE 270K 5% 1/10W	
R823	1-249-413-11	CARBON 470 5% 1/4W	F
R824	1-216-125-00	METAL GLAZE 1.5K 5% 1/10W	
R825	1-216-105-91	METAL GLAZE 220K 5% 1/10W	
R828	1-216-115-00	METAL GLAZE 560K 5% 1/10W	
R834	1-215-869-11	METAL OXIDE 1K 5% 1W	F
R835	1-249-413-11	CARBON 470 5% 1/4W	F
		< VARIABLE RESISTOR >	
RV102	1-241-765-11	RES, ADJ, METAL GLAZE 22K (KV-21M1B/21T1B)	
RV801	1-241-630-11	RES, ADJ, CARBON 10K	
		< SWITCH >	
S001	1-571-532-21	SWITCH, TACTIL	
S002	1-571-532-21	SWITCH, TACTIL	
S003	1-571-532-21	SWITCH, TACTIL	
S004	1-571-532-21	SWITCH, TACTIL	
S005	1-571-532-21	SWITCH, TACTIL	
S006	1-571-532-21	SWITCH, TACTIL	
S601	⚠ 1-571-433-21	SWITCH, PUSH (AC POWER)	
		< TRANSFORMER >	
T601	⚠ 1-427-962-11	TRANSFORMER, LINE FILTER	
T602	⚠ 1-429-207-11	TRANSFORMER, CONVERTER	
T801	1-437-090-31	HDT	
T802	⚠ 1-453-199-11	TRANSFORMER ASSY, FLYBACK (NX-1741/U2E)	

REF.NO.	PART NO.	DESCRIPTION	REMARK
		< THERMISTOR >	
THP601	⚠ 1-808-[illegible]-31	THERMISTOR (POSITIVE) 059	
		< TUNER >	
TU101	8-598-331-00	TUNER (BT-AC401) (KV-21M1A/21T1A/21M1E/21T1E/21M1K/21T1K)	
	1-693-310-11	TUNER (TELE4-002B) (KV-21M1B/21T1B/21M1D/21T1D/21T1R)	
	1-693-302-11	TUNER (UV1315) (KV-21M1L/21T1L)	
	8-598-333-00	TUNER (BT-AU601) (KV-21M1U/21T1U)	
		< CRYSTAL >	
X001	1-578-774-11	VIBRATOR, CRYSTAL	
X301	1-760-907-21	VIBRATOR, CRYSTAL(KV-21M1K/21T1K/21T1R)	
X302	1-760-710-21	VIBRATOR, CRYSTAL	

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	*A-1638-074-A	C BOARD, COMPLETE **********			
		< CAPACITOR >			
C701	1-102-074-00	CERAMIC	0.001MF	10%	50V
C702	1-102-117-00	CERAMIC CHIP	820PF	10%	50V
C703	1-102-117-00	CERAMIC CHIP	820PF	10%	50V
C704	1-102-824-00	CERAMIC CHIP	470PF	5%	50V
C705	1-102-824-00	CERAMIC CHIP	470PF	5%	50V
C706	1-102-824-00	CERAMIC CHIP	470PF	5%	50V
C707	1-107-651-11	ELECT	4.7MF	20%	250V
C709	1-162-114-00	CERAMIC	0.0047MF		2KV
C710	1-126-967-11	ELECT	47MF	20%	16V
C711	1-101-880-00	CERAMIC	47PF	5%	50V
C712	1-101-880-00	CERAMIC	47PF	5%	50V
C713	1-101-880-00	CERAMIC	47PF	5%	50V
		< CONNECTOR >			
CNC71	*1-568-881-51	PIN, CONNECTOR 6P			
CNC72	*1-568-880-51	PIN, CONNECTOR 5P			
CNC73	1-695-915-21	TAB (CONTACT)			
CNC76	1-695-915-21	TAB (CONTACT)			
		< DIODE >			
D701	8-719-991-33	DIODE 1SS133T-77			
D702	8-719-991-33	DIODE 1SS133T-77			
D703	8-719-991-33	DIODE 1SS133T-77			
D704	8-719-991-33	DIODE 1SS133T-77			
D705	8-719-991-33	DIODE 1SS133T-77			
D706	8-719-991-33	DIODE 1SS133T-77			
D707	8-719-991-33	DIODE 1SS133T-77			
D708	8-719-991-33	DIODE 1SS133T-77			
D709	8-719-991-33	DIODE 1SS133T-77			
D716	8-719-991-33	DIODE 1SS133T-77			
D717	8-719-054-81	DIODE 1SS292			
D718	8-719-991-33	DIODE 1SS133T-77			
D719	8-719-054-81	DIODE 1SS292			
D723	8-719-991-33	DIODE 1SS133T-77			
D724	8-719-054-81	DIODE 1SS292			
		< CRT SOCKET >			
J701	⚠ 1-526-990-21	SOCKET, CRT			

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REF.NO.	PART NO.	DESCRIPTION				REMARK
		< TRANSISTOR >				
Q701	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q702	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q703	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q704	8-729-906-70	TRANSISTOR BF871-127				
Q705	8-729-906-70	TRANSISTOR BF871-127				
Q706	8-729-906-70	TRANSISTOR BF871-127				
Q707	8-729-200-17	TRANSISTOR 2SA1091-O				
Q708	8-729-200-17	TRANSISTOR 2SA1091-O				
Q709	8-729-200-17	TRANSISTOR 2SA1091-O				
		< RESISTOR >				
R700	1-260-087-81	CARBON	100	5%	1/2W	
R701	1-249-417-11	CARBON	1K	5%	1/4W	
R702	1-249-417-11	CARBON	1K	5%	1/4W	
R705	1-247-791-91	CARBON	22	5%	1/4W	
R706	1-247-791-91	CARBON	22	5%	1/4W	
R707	1-247-791-91	CARBON	22	5%	1/4W	
R708	1-247-815-91	CARBON	220	5%	1/4W	
R709	1-247-815-91	CARBON	220	5%	1/4W	
R710	1-247-815-91	CARBON	220	5%	1/4W	
R711	1-249-417-11	CARBON	1K	5%	1/4W	
R714	1-249-417-11	CARBON	1K	5%	1/4W	
R715	1-249-417-11	CARBON	1K	5%	1/4W	
R716	1-249-417-11	CARBON	1K	5%	1/4W	
R717	1-247-758-11	CARBON	3.3K	5%	1/2W	
R718	1-247-758-11	CARBON	3.3K	5%	1/2W	
R719	1-247-758-11	CARBON	3.3K	5%	1/2W	
R720	1-216-487-11	METAL OXIDE	12K	5%	3W	F
R721	1-216-487-11	METAL OXIDE	12K	5%	3W	F
R722	1-216-487-11	METAL OXIDE	12K	5%	3W	F
R724	1-202-814-91	SOLID	33K	10%	1/2W	
R725	1-202-846-00	SOLID	470K	10%	1/2W	
R726	1-202-844-00	SOLID	330K	10%	1/2W	
R727	1-202-848-00	SOLID	680K	10%	1/2W	
R729	1-216-348-00	METAL OXIDE	0.82	5%	1W	F
R734	1-247-815-91	CARBON	220	5%	1/4W	
R735	1-247-815-91	CARBON	220	5%	1/4W	
R736	1-247-815-91	CARBON	220	5%	1/4W	
R744	1-247-756-11	CARBON	2.2K	5%	1/2W	
R745	1-247-756-11	CARBON	2.2K	5%	1/2W	
R746	1-247-756-11	CARBON	2.2K	5%	1/2W	
		< VARIABLE RESISTOR >				
RV701	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M				
RV702	1-241-656-21	RES, ADJ, METAL GLAZE 110M				

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REF.NO.	PART NO.	DESCRIPTION	REMARK
		MISCELLANEOUS	
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	⚠ 1-406-828-11	COIL, DEGAUSSING	
	1-452-032-00	MAGNET, DISC; 10MM Ø	
	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM Ø	
	1-452-277-00	MAGNET, BMC	
	⚠ 1-453-169-11	TRANSFORMER ASSY, FLYBACK (UX-1604A2)	
	1-503-258-21	SPEAKER (KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/21M1E/21T1E/21M1L/21T1L/21M1U/21T1U)	
	1-504-899-11	SPEAKER (9X5CM) (KV-21M1K/21T1K/21T1R)	
	⚠ 1-540-006-22	CAP ASSY, HIGH-VOLTAGE	
	⚠ 1-571-433-21	SWITCH, PUSH (AC POWER)	
	⚠ 1-690-270-21	CORD, POWER (WITH CONNECTOR) 2.5A/250V (KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/21M1E/21T1E/21M1L/21T1L/21M1U/21T1U)	
	⚠ 1-590-762-11	CORD, POWER (WITH PLUG) 2.5A/250V (KV-21M1L/21T1L/21M1U/21T1U)	
	8-598-331-00	TUNER (BT-AC401) (KV-21M1A/21T1A/21M1E/21T1E/21M1K/21T1K)	
	1-693-310-11	TUNER (TELE4-002B) (KV-21M1B/21T1B/21M1D/21T1D/21T1R)	
	1-693-302-11	TUNER (UV1315) (KV-21M1L/21T1L)	
	8-598-333-00	TUNER (BT-AU601) (KV-21M1U/21T1U)	
	⚠ 8-738-786-71	ITC	
	⚠ 8-451-295-45	DEFLECTION YOKE (Y21PFA2BA)	
V901	⚠ 8-738-784-05	PICTURE TUBE (SD-169)(A51JXH61X)	

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REF.NO.	PART NO.	DESCRIPTION	REMARK

ACCESSORIES AND PACKING MATERIALS

	1-770-783-11	CONNECTOR, CONVERSION (KV-21M1K/21T1K/21T1R)
	4-203-438-41	MANUAL, INSTRUCTION (KV-21M1A/21T1A) (ITALIAN)
	4-203-438-51	MANUAL, INSTRUCTION (KV-21M1B/21T1B) (FRENCH/ITALIAN/GERMAN/DUTCH)
	4-203-438-11	MANUAL, INSTRUCTION (KV-21M1D/21T1D) (ENGLISH/DANISH/SWEDISH/FINNISH/ GREEK/DUTCH/TURKISH/NORWEGIAN)
	4-203-439-11	MANUAL, INSTRUCTION (KV-21M1D/21T1D) (GERMAN/ENGLISH)
	4-203-438-71	MANUAL, INSTRUCTION (KV-21M1E/21T1E) (SPANISH)
	4-203-438-81	MANUAL, INSTRUCTION (KV-21M1E/21T1E) (PORTUGUESE/SPANISH)
	4-203-440-91	MANUAL, INSTRUCTION (KV-21M1K/21T1K) (HUNGARIAN/POLISH/CZECH/ENGLISH/ RUSSIAN/BULGARIAN)
	4-203-438-61	MANUAL, INSTRUCTION (KV-21M1L/21T1L/21M1U/21T1U) (ENGLISH)
	4-203-441-91	MANUAL, INSTRUCTION (KV-21T1R) (RUSSIAN/BULGARIAN/ENGLISH)
*	4-042-477-01	BAG, PROTECTION (KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/ 21M1E/21T1E)
*	4-039-905-02	BAG, PROTECTION (KV-21M1K/21T1K/21M1L/21T1L/21T1R/21M1U/ 21T1U)
*	4-203-447-01	INDIVIDUAL CARTON (KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/ 21M1E/21T1E)
*	4-203-477-11	INDIVIDUAL CARTON (KV-21M1K/21T1K/21M1L/21T1L/21T1R)
*	4-203-446-01	INDIVIDUAL CARTON (KV-21M1U/21T1U)
*	4-203-444-01	CUSHION (LOWER) (ASSY) (KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/ 21M1E/21T1E)
*	4-203-444-11	CUSHION (LOWER) (ASSY) (KV-21M1K/21T1K/21M1L/21T1L/21T1R/21M1U/ 21T1U)
*	4-203-445-01	CUSHION (UPPER) (ASSY) (KV-21M1A/21T1A/21M1B/21T1B/21M1D/21T1D/ 21M1E/21T1E)
*	4-203-445-11	CUSHION (UPPER) (ASSY) (KV-21M1K/21T1K/21M1L/21T1L/21T1R/21M1U/ 21T1U)

REMOTE COMMANDER

	1-473-194-11	COMMANDER, STANDARD TYPE (RM-836)

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